



FRIDAY, OCTOBER 10, 1879.

## Haynes' Reservoir Oilier for Locomotive Slide-Valves.

The engravings represent an arrangement devised by Mr. Orville Haynes, Master Mechanic of the Iron Mountain Railroad, for oiling locomotive valves. It consists of a cast-iron reservoir, *A*, which is placed on top of the boiler near the chimney, and filled with oil or tallow, which is kept in a fluid condition by the heat of the boiler. At the bottom of the reservoir is a measuring valve, *B*, which consists of a case with a hollow conical plug fitted to it, similar to that of an ordinary plug cock. The case *B* of the valve has openings, *C C*, which communicate with the reservoir. The plug has corresponding openings, and when it is turned so that the latter correspond with *C C*, communication is opened between the reservoir and the inside of the plug or measuring-valve, and the latter is filled with oil. The case *B* has other openings, *D D*, represented by dotted lines in fig. 1, on its under side, which communicate with pipes, *F F*, which are connected by pipes, *G*, with the steam-chests of the locomotive. If after the measuring-valve is filled with oil it is turned a quarter turn, the openings *C C* will be closed and communi-

## Contributions.

## Railroad Combinations.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The public view with evident distrust and decided disapproval the formation of combinations between the different members of any important interest, and it is very apparent that they consider that the only object that can be the incentive for the formation of any such combinations is the extortions of higher and unreasonable prices from the purchaser.

Hence we hear such strong denunciations of what are usually termed "grasping monopolies;" such sweeping assertions that all combinations are prejudicial to the public welfare.

It cannot be denied that the facts in many cases in the past have, and, probably, in many cases in the future will, justify fully as strong and sweeping assertions as these; for it has often occurred that by the formation of skillful and compact combinations great monopolies have been created, which, being controlled by avaricious and unprincipled managers, have pursued a course of action that has been detrimental to the public good, and that has required the consumer to pay for certain articles far more than what would be a just and equitable price. Still, because this may be often true, it does not sustain any such sweeping assertions as that all combinations are wrong and antagonistic to the best interests of the community. For when the object

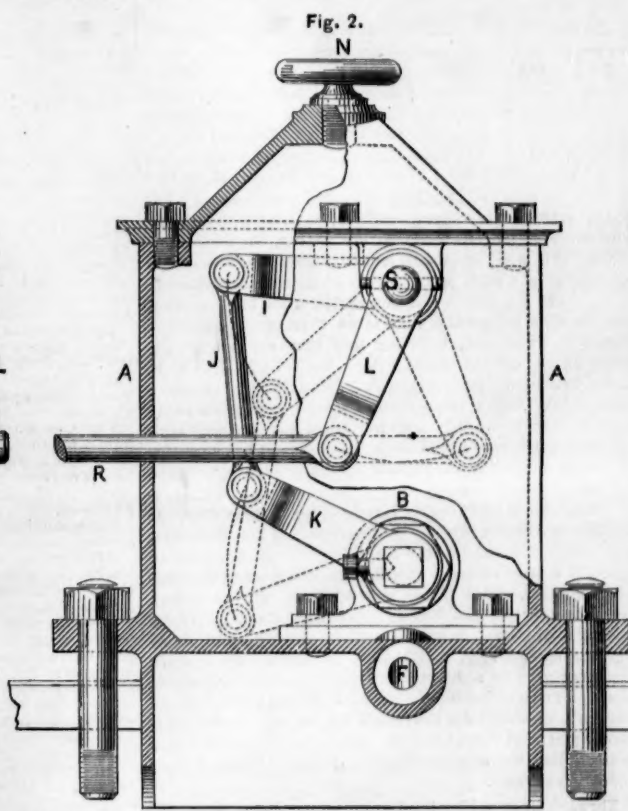
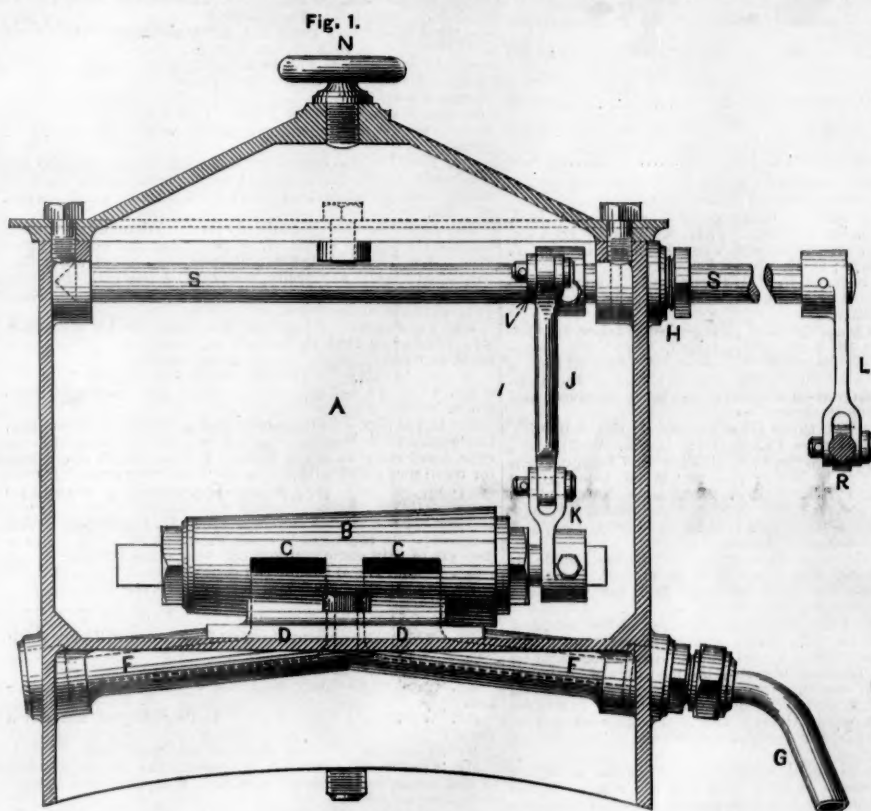
equivalent to taking the unpopular side of the argument on any question, and to maintain that these combinations are frequently beneficial to the public, as well as necessary for the financial success of the railroads would be considered by many a Granger citizen to be as rank treason as ever existed since the day of Arnold.

But candid and unbiased investigation will demonstrate the truth of this position, and will completely vindicate the policy of roads agreeing together to anything that will maintain fair rates of transportation.

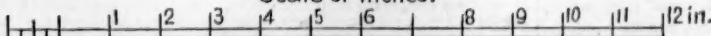
It would hardly be right to hold old King Solomon responsible for the ancient proverb, that "opposition is the life of trade," for that eminently wise old gentleman had seen enough of this world to know that while opposition might, to a certain extent, be the life of trade, it was oftentimes the death of traders, especially if they engaged in such warm competition as to disregard the cost of production in their eager desire to do a large business.

Rivalry in business within reasonable limits may act as a stimulus to energetic action, and induce a closer study of the needs and taste of the consumer, but when everything is sacrificed to an overpowering ambition to secure trade that would ordinarily go to other dealers, the result is ultimately bankruptcy and disaster to all.

In support of the proposition that any arrangement that will secure a moderate profit to the railroads concerned in it, and that combinations formed for this purpose are conducive to the general prosperity of the community, the following is offered:



Scale of Inches.



HAYNES' OILER FOR LOCOMOTIVE SLIDE-VALVES.

cation will be established between the inside of the measuring-valve and the pipes *F F*, and thence by the pipes *G* with the steam-chests. As the openings *C C* are closed, only the quantity of oil contained in the measuring-valve can flow into the steam-chests. In this way the quantity of oil supplied to the valves can be accurately gauged each time they are oiled.

The measuring-valve is operated by a shaft *S*, on the inside of the reservoir but which extends to the outside through a stuffing-box, *H*. On the inside it has an arm, *J*, which is connected by a rod, *J*, to another arm, *K*, attached to the valve-plug. On the outside of the reservoir is another vertical arm, *L*, which is connected by a rod, *R*, with the cab and by which the measuring-valve can be operated. The action of this mechanism is obvious from the engravings; the dotted lines in fig. 2 represent the position of the arms when the measuring-valve is open to the reservoir, so as to fill the former with oil; and the full lines show the levers as they stand when the valve is discharging the oil through the pipes *F G*.

Suitable plugs are screwed into the ends of the measuring-valve plug, so that its capacity can be either increased or diminished by screwing them further in or out.

The reservoir is filled by unscrewing the plug *N* on top. This plug has a small hole drilled through the centre to admit air into the reservoir, and thus equalize the air pressure on the inside and outside of the reservoir.

This device has been used by Mr. Haynes for some time on the engines on the Iron Mountain road, and he reports that it is working very satisfactorily. It certainly gives a very convenient way of knowing exactly how much oil is applied to the valves, which often is determined by mere guess-work. Mr. Haynes' address is Carondelet, Mo.

is only to secure a fair recompense for value given or a just remuneration for services rendered, and the means used to attain this result are honorable, combinations are beneficial to all and are praiseworthy weapons of defense.

While we are more accustomed to designate as combinations the union of large bodies or immense capital, it is none the less true that combinations of greater or less magnitude permeate all classes of society; in fact, society itself is merely a combination of individuals banded together mainly to better protect the interests and promote the prosperity of each member, and the laws and usages of society are merely the different articles of the contract. That this combination is not only justifiable, but necessary, every one will admit, and the natural conclusion will be, that if combination or union, in its broadest sense, be commendable, may not the same be said of smaller or more limited combinations, when the object be good and their action honest?

Among the different combinations that have been the subject of public displeasure, none have been more bitterly denounced or more strongly opposed than combinations made between railroads in relation to competitive trade, whether the arrangement has been to consolidate, to pool revenue, or simply to enter into a permanent, or even temporary, arrangement to maintain rates.

In either event, the public has looked upon it as a project to make them pay extortionate and arbitrary rates, and, while the facts of the case would rarely sustain this declaration, they have considered as indisputable and conclusive evidence that this was the true intent of the compact, the fact that rates have been advanced from the exceedingly low rates that had existed before the roads came to an understanding among themselves.

To defend the action of the railroad companies is virtually

Every one will admit that, owing to the vast amount of capital invested in railroads in this country, amounting in the aggregate to many hundred million dollars, its interests are very closely allied with all other interests of the country; so closely indeed, that no important action can be taken in relation to its interest but what will affect to a very great extent all other branches of trade. If this vast capital be unproductive, it means that the incomes of the many bondholders and stockholders will be reduced in the same proportion as the profits derived from the capital invested in these enterprises are reduced; and the diminution of their income will result in the adoption of a rigid system of economy until their expenditure corresponds with their decreased income.

As an employer of labor, the railroads take an important rank in the industries of the country; employing, as they do, many thousands in the various departments of the service. The number employed, or, at least, the wages paid, depend almost entirely upon the profits of the business. Experience demonstrates that any reduction of revenue is met by railroad managers by curtailing expenses as much as possible, and the very first thing to feel it will be the price of labor.

There are always many repairs that cannot be postponed, the material for which will cost the market price, but they will endeavor to pare down the price of the labor to the lowest figure possible. Consequently, if the income of the capitalist and the wages of the employé are so dependent on the business of the road, and if they endeavor to live within their respective incomes, it is but fair to concede that the various trades that supply their diversified wants will feel any contraction that may be made in their incomes.

Again, the many manufacturers that furnish the railroads with engines, cars, rails or supplies of any kind will also be greatly affected by any depression that may occur in the



transportation business; and, as these manufacturers employ a large amount of help, whose number and wages depend on the demand for the particular article in the manufacture of which they are employed, and as the dealers that supply them with food to eat or clothes to wear will also feel the result, here is another instance where the influence of the railroads is wide-spread.

If any depression of the railroad business has such injurious effect on so many other important branches of trade, it is most assuredly consistent to maintain that anything that will prevent the occurrence of such a state of affairs will be beneficial to the public welfare and will have a tendency to promote prosperity in all the varied industries.

So much for the public; now for the railroads. Let us inquire what is the most to their advantage? to meet competitors in a spirit of compromise and equity, or to declare for open war? Assuming that railroads do not materially differ from other corporations, and that the main object is to make all the money they can, the first question will be as to which method will be the most profitable. Any railroad man who has been identified with any warm fight for trade will unhesitatingly say that any fair agreement in relation to competitive traffic, honestly kept by all parties, is highly preferable, and that where there is a disposition to compromise by division of tonnage, or by a mere plan to establish and hold paying rates, there is very little difficulty in forming and carrying out the terms of the compact.

In support of the assertion that some combination in relation to competitive traffic will be beneficial, take the following illustration:

The Deep River & Shallow Lake and the Hightown & Lowburgh Railroads are competing lines between two large cities; in the matter of length of line, grades, etc., neither has any special advantage; they are both under the control of energetic, wide-awake and ambitious managers—men whose bumps of pugnacity and aggressiveness are fully developed, and who are determined at all hazards to have what they consider their share of the business between these two points. To start off, they have but slight knowledge of what the amount of this business really is; to be sure, they know how much of the business they are getting, but their information as to what proportion of the business their competitor is getting is wholly speculative, and is generally over-estimated. For this reason their conception of the importance of this trade is far greater than more thorough information would warrant, and, believing that they are not getting their share of the trade, they use every device to divert trade from their opponent. Printed tariffs become a dead letter. Every shipper has a special rate, presumably known only to himself and the officials of the road with whom it was made; and as the competing road has no means of finding out what the rates of its opponent are, it has to fight in the dark, and will underbid until it secures the coveted trade for a short time. But only for a short time. It being a case of dog eat dog, the final result is that both lines are carrying the traffic between these two points at ridiculously low rates, and not securing one iota more of the business than they would if fair and equitable rates prevailed. Nor is this cutting and fluctuation of rates of any particular benefit to any one. What a freighter may make by securing one special rate, he is likely to lose by some other freighter getting a little lower rate from the other line. Hence, a general feeling of distrust is caused among all the parties interested. As merchants are like all other sensible people and wish to make all the money they can, it is rather unlikely that the consumers will be benefitted much by any reduction of rates.

Through some sudden inspiration, or by the intervention of some apostle of common-sense, these energetic and enterprising managers are caused to see the error of their ways, and the absurdity of their previous policy, and they get together and enter into an arrangement to maintain fair and equitable rates, which they will find no trouble in obtaining.

Then they find that they receive about the same business as heretofore, and the increased revenue resulting therefrom, conclusively proves the wisdom of the policy that they had been so very dilatory in adopting. They will also find, in many instances, that they had very exaggerated ideas concerning the importance of the competitive trade, over which they had fought so bitterly.

When the new order of things becomes permanently established, and every shipper finds that he stands on the same footing, as all other shippers, and that the rates of freight are no higher than the customary rates on other lines, they will be better satisfied than when they paid lower rates, but had no assurance but what some other shipper of the same kind of goods had been able to secure better rates than they.

Habitual croakers may say that this is incipient monopoly, and that while a combination of this kind may in itself be all right, it is only the starting point for subsequent abuses; that when the roads find that by cooperation they have no difficulty in holding fair rates, they will endeavor to increase the rates to an unreasonable figure; that when they find they possess the power, they will be likely to use it arbitrarily.

Not being endowed with the gift of prophecy it would hardly be proper to affirm or deny the truth of these assertions; but taking the past as a guarantee for the future, it would be very hard to find a precedent that would in any degree justify these charges. Most railroad managers are too desirous of increasing the volume of their trade to its greatest limits, and too strong advocates of the efficiency of low rates in bringing about this desired result, to enter into any plans that would be likely to check the movement of freight. Still if any manager should desire to attempt any great infringements on the rights of the public, the dread of having to suffer the terrors of the modern inquisition—an

Assembly Committee, would probably be sufficient restraint upon him. \*\*\*\*\*

## INTERNATIONAL ROAD-MASTERS' ASSOCIATION.

### First Annual Convention.

The first annual convention of this Association met at the International Hotel, Niagara Falls, Sept. 10, at 11 a.m., and was called to order by the President, Mr. L. J. Spaulding.

The reading of the minutes of the Boston meeting was dispensed with.

The roll being called, the following new members signed their names: J. H. McDonald, Chicago & Northwestern; H. D. Hanover, Thomas Adamson, Ohio & Mississippi; L. D. Badger, Boston, Concord & Montreal; D. E. Sullivan, Pittsburgh, Cincinnati & St. Louis; W. H. Caniff, Lake Shore & Michigan Southern; D. L. Harris, W. H. Marshall, Vandalia Line; J. Burnett, J. H. Preston, Chicago, Rock Island & Pacific; C. A. Merriman, Thomas Hilliard, Philadelphia, Wilmington & Baltimore; T. G. Armstrong, P. Collopy, E. Collopy, Atlantic & Great Western; T. Collopy, New York, Lake Erie & Western; James Brown, Stephen Suit, W. H. Barnes, New York Central & Hudson River; C. H. Gilbirds, R. H. Minor, Wabash. The names of C. E. Keys, H. E. Moore, David Wright and Amos Rogers were added by letter.

Chief Engineer Charles Latimer, of the Atlantic & Great Western, and Chief Engineer S. T. Fuller, of the Philadelphia, Wilmington & Baltimore, both of whom were present, were chosen honorary members.

The Secretary then read communications from Messrs. Doyle, Detroit, Lansing & Northern; James Heron, Atchison, Topeka & Santa Fe; H. E. Bradley, Allegheny Valley; J. W. Wellington, European & North American; H. E. Keiser, Chicago & Northwestern; J. S. Lane, Housatonic; David Wright, Chicago, Milwaukee & St. Paul, and from Mr. W. S. Huntington.

The report of Treasurer G. R. Hardy was then read as follows:

Credit:	
To cash from G. T. Wiswell, Secretary.....	\$35.00
Debit:	
By cash paid Secretary for stationery, printing, etc.....	15.50
Balance, cash on hand.....	\$19.50

The report was accepted. Some bills presented by the Secretary were referred to the Executive Committee.

The election of officers being next in order, Mr. L. J. Spaulding was chosen President; J. W. Kennedy, First Vice-President; J. W. Alsop, Second Vice-President; George T. Wiswell, Secretary; G. R. Hardy, Treasurer.

Messrs. A. C. Stevens, C. H. Gilbirds and Thomas Adamson were appointed a committee to select five names for the Executive Committee.

The subject of place for next meeting being taken up, Cincinnati, Chicago, St. Louis, Philadelphia, New York, Cleveland and Indianapolis were suggested. A proposal that a ballot be taken by letter after the adjournment of the Convention was negatived on account of the labor involved, and Cleveland was finally chosen.

The Committee of three then presented the following names for the Executive Committee: D. W. Wellington, European & North American; J. H. Preston, Chicago, Rock Island & Pacific; R. S. Minor, Wabash; W. H. Caniff, Lake Shore & Michigan Southern; J. W. Shanks, New London Northern.

These nominations were approved by the Convention, and a recess was then taken for dinner.

After recess, Mr. Charles Latimer, by request, made an interesting address, which we have heretofore published (*Railroad Gazette* for Sept. 26, page 507), for which the thanks of the Convention were voted.

Some discussion followed on the best order of business, and several suggestions were made; among others, that a hospital for worn-out railroad men and an insurance fund be discussed. Mr. Latimer described the meetings of Atlantic & Great Western road-masters as suggesting some methods of discussing points and arriving at conclusions. It was resolved to hold an evening session and to appoint a committee to prepare questions for discussion then and on the second day.

An article from the *Railroad Gazette* upon questions suitable for discussion by the Convention was read. On the suggestion that each road-master present the chief difficulty he had found in maintaining track, discussion was opened.

Mr. WISWELL.—I would say that the most difficult thing I have to contend with is sliding banks, clay banks, that is in the spring of the year. I was talking with our Manager a short time ago about the advisability of using some of our sleepers for building a wall; whether it would not be economical instead of putting up stone, but he disagreed with me. I, however, cited cases I have known of from hearsay, on the Central Vermont, where they had bank-walls built of old ties, up 20 years, which were in as good a state of preservation as when put up.

Mr. HARDY.—Fire and water are the elements we have to handle one way and another. Now, with water, we have all sorts of trouble; sometimes it comes and takes out a culvert or bank, sometimes it soaks into clay-banks, and down comes the bank on the track; and sometimes it comes under the track. Last year was the toughest year we have had. I think the New England men will bear me out in that—with fire on the bridges, and water in the wash-outs and slides, throwing the track in many cases—we can sum up the principal part of our anxiety and trouble.

I have one more word to say. I would like to know if, in the opinion of those members of the Association who are conversant with stone ballast, whether it is better than gravel ballast. We have places in ledges where the ledges are not taken out as thoroughly as we would like, and the water comes in and freezes and throws out the track in winter; and, speaking a few days ago with a man from the West on the subject, he said: "Dig out that ledge and put in stone ballast, and you will be perfectly free from trouble."

The PRESIDENT.—I call upon Mr. P. Collopy on the question of ballast.

Mr. COLLOPY.—I consider gravel ballast ahead of any other ballast I know of, stone and sand included.

Mr. ALSOP.—Do you consider it better than furnace cinders?

Mr. COLLOPY.—Yes, I do. My opinion is that within five years from the time the cinder ballast is laid it will snap and break in winter time.

Mr. ALSOP.—Would not that hold good also with stone ballast?

Mr. COLLOPY.—Stone ballast would have the same tendency. Locomotive ashes and good clean gravel I prefer to any other kind. Locomotive ashes make a good ballast.

Mr. HARDY.—How much more does it cost to handle the ties in stone or cinder ballast—to take out and replace them?

Mr. COLLOPY.—We do not know that. We are not using them enough to know. We began using them about two years ago. We cannot use stone as we do gravel or loco-

motive ashes. We have to raise the track at least six inches before using them at all; then they do very well; but you cannot use them where you raise the track an inch or an inch and a half.

Mr. HARDY.—Do you have the stone ballast?

Mr. COLLOPY.—No; we use the gravel. It costs too much to unload cinders and get them on the track. I could get eight or ten cars a day loaded for nothing. We tried to take them and get them unloaded, but it took such a long time to unload them that some days, when the train came along and they could not stop for them, our men would come from 10 to 15 miles, and would wait and lose one-half a day's time before they could unload them.

Mr. HARDY.—Did you have them in the track last winter?

Mr. COLLOPY.—Yes, sir.

Mr. HARDY.—And did the track heave, or did you see any difference?

Mr. COLLOPY.—No; there was a good track last winter.

Mr. LATIMER.—You have the road in first-rate order with gravel ballast?

Mr. COLLOPY.—Yes, sir.

Mr. LATIMER.—Now, you do not want to take out gravel ballast and put in cinder ballast, because you have good ballast now, and, to take out any of it, you have to raise it six inches? The question is: Would you take out gravel ballast to-day, when you would have to raise the track six inches in order to get it under at all? or, would you repair the track simply with a little gravel, where you can raise it one-half an inch or an inch?

Mr. COLLOPY.—Yes, that is the point. You will need at least 15 or 20 men in a gang to raise the track six inches, especially with as many trains running as we have.

Mr. ARMSTRONG.—I would like to hear from any of the road-masters using cinders or stone ballast as to what it costs, not in dollars and cents, but in days' labor.

Mr. ALSOP.—Do you mean putting in ties here and there?

Mr. ARMSTRONG.—I mean ties, 2,640 to the mile; I mean to finish it complete. I will state here it is my system where the track is in true service and level, and where there is no gravel to lift it, to have my foreman draw the spike and raise the track so as not to consume gravel unnecessarily. We only start the spikes, not draw them. We are not troubled with joints on our road; we have places where the centre gets low before the joints. It is a combined joint and chair. Our joint and chair together will weigh about 50 pounds.

Mr. SULLIVAN.—Wherever the joint occurs must be the weakest point of the rail. I think there is nearly one-half more labor performed on joints than on any other part of the rail.

Mr. ARMSTRONG.—I contend the gentleman is wrong. Taking the joint I speak of, properly put up, you will find that the deflection is but a trifle less than what the deflection would be in any other distance of the rail, the same length. So with the ties, eight inches apart, you increase your strength at the joint.

The PRESIDENT.—I hope the gentleman in his discussion will remember that the subject is "road-bed." Joints will come in time.

Mr. SULLIVAN.—Do you use rolling-mill cinders?

Mr. COLLOPY.—Yes; we call them slag, iron and limestone.

Mr. SULLIVAN.—I first introduced them on the Pittsburgh, Chicago & Fort Wayne road. I had the blacksmith make little small mills to crack them. We pay \$1.25 a car-load for them now; and with 75 or 80 trains a day passing over the road, my experience is that gravel and cinders will go through it very soon. Cinders will rot out a tie very fast, and the hot sun after a rain will affect it; the tie will crack and snap. It apparently looks well, but let two or three showers of rain come and you can look right through it.

Mr. COLLOPY.—What do you consider the life of a tie?

Mr. SULLIVAN.—My experience is that the life of a tie is seven years.

Mr. COLLOPY.—In cinders?

Mr. SULLIVAN.—About three or four years will play them out in cinders.

Mr. COLLOPY.—In mill cinders?

Mr. SULLIVAN.—They will last equally with rock ballast.

Mr. WISWELL.—What kind of timber do you use down there?

Mr. SULLIVAN.—We use burr oak and white oak.

Mr. ARMSTRONG.—Answer my question as to the number of ties a man and crew can put in in a day, furnace cinders compared to gravel.

Mr. SULLIVAN.—I always calculate my plans in putting in ties that they will put in 15 ties a day to the man. The foreman always does the spiking; that is, in fine gravel.

Mr. ARMSTRONG.—But the gentleman has evaded my question. I want to know what labor it takes to bring his ties out of the cinders. How many ties will a man take out of a road ballasted thoroughly with the furnace cinders, and do the spiking and all the other work?

Mr. SULLIVAN.—I have not tested the point exactly. I never confine the men to anything of that kind, to the working of mill cinders.

Mr. COLLOPY.—I would also like to ask how many feet of track you will allow in the coal cinders for each man a day?

Mr. SULLIVAN.—We use no coal cinders.

Mr. COLLOPY.—I would be willing to make a wager that I could put in a mile of gravel while you were putting one-half a mile of furnace cinders.

Mr. HARDY.—Well, if it costs double the amount for furnace cinders that it does in gravel ballast, here is a man who claims the tie will last one-third longer in cinder, from six to seven years.

Mr. SULLIVAN.—It is owing a great deal to the time of year the tie is got out.

Mr. HARDY.—If it costs eight cents for gravel, it costs 16 cents for cinder on that basis, then your tie costs in the beginning 50 cents, that makes the price of the tie 66 cents, against 56 cents, and the 66-cent tie will last one-third longer, of course there is something gained in that.

Mr. ARMSTRONG.—I will have to gainsay Mr. Hardy's statement, and ask Mr. Latimer to show what has been the average life of a tie on the Atlantic road with furnace cinder; I think he will state the average life of a tie is eight years.

Mr. HARDY.—One minute. These are simply conclusions I have arrived at. There may be an exception to the rule.

Mr. SULLIVAN.—Perhaps the timber and the section of the country has to do with that. I would like to hear from members present in regard to that.

Mr. LATIMER.—I can give you the average of the life of ties on the Atlantic road. On the First Division where there is nothing but gravel ballast, ten years, average; including sidings on the Second Division, which is also gravel ballast, but very poorly ballasted—that is Mr. Collopy's division—eight years and four months; on the Third, hardly better ballast, nine and one-tenth years; on the Fourth, a good deal better ballast, ten years and three months. On a portion of the road, not well ballasted, very poorly ballasted indeed—that is the Third Division—seven years and eight months; and in the longest part, better ballasted, eight years and two months. In another portion, where the traffic is light, eight years and five months; and where it is still lighter, with



good gravel ballast, eleven years. And here we come to a portion of the road which is very curving, and very fair ballast, all gravel, however, eight years and eight months, and when you come to the division which Mr. Collopy has charge of, which has four rails on it, you have six years and nine months; and on the division which has most of the cinder ballast—I mean mill cinder, slag—six years and eight months at least.

Mr. HARDY.—Are these ties taken out for decay or wear?

Mr. LATIMER.—Yes, for decay. The average of the whole road, between five and six miles, is eight and four-tenths years for the life of ties.

Mr. HARDY.—That still leaves me in the dark, where I commenced. The question is, whether in cinders the ties will live longer than in gravel?

Mr. ARMSTRONG.—What class of timber is this tie made of?

Mr. HARDY.—Chestnut.

Mr. ARMSTRONG.—Unless there is wear and break under the rail, the remedy is not then in the ballast?

Mr. KENNEDY.—The more rock you put under a chestnut tie, the quicker the tie will give out, because it becomes more rigid all the time.

Mr. HARDY.—That is a question. About three or four years ago there was a piece of track laid for a change, and upon one of those tracks, about three-fourths of a mile was sawed ties, which wear like bridge ties, and I do not think the cutting up of those ties amounts to 25 per cent. of the rest of the road. The track is well laid; it is a silicious country, good quartz rock, and there is no heaving at all. That one-half or three-quarters of a mile is showing a good record for sawed ties. The ballast is so evenly distributed under it as to divide up this surface-bearing, and not concentrate it as upon poorly ballasted road, and where the road does not get a good even bearing on the tie; therefore the question comes right back, if the tie stands so well where it is sawed and finely supported; if it does wear so nicely on the bridges where the ties are good. If your rock ballast is what it is claimed, making a solid surface, then is not a tie resting on that rock ballast saving the wear of the tie and of the rail very much?

Mr. LATIMER.—I have no doubt whatever that there is more wear upon the rail upon the rock ballast, and upon the cinder ballast, than there is upon gravel, or upon engine cinder, ashes, or coal dust.

Mr. HARDY.—That is a very strong argument in favor of the gravel then.

Mr. LATIMER.—I have been thinking of that a great deal. That there is a great deal lost in the wear of rails in the hard ballast, we have not yet considered. I believe that the tie with hard ballast will be dug into by the rail more than it will upon an elastic ballast.

Mr. COLLOPY.—There is more wear on the rolling stock, and there is where we find the greatest proportion of our broken rails in winter time.

Mr. ARMSTRONG.—I think you will find that locomotive cinders are calculated to preserve the life of some kinds of timber, and is injurious to others. In 1864 I filled a track with locomotive cinders, and used white hemlock ties. Not one per cent. of those have been removed to this day. That track is there yet, and that has upon it from three to four feet of locomotive cinders; but we filled another track, putting in cinders with oak ties, and they rotted out in five years, so I think you will find a certain class of timber is suited to a certain kind of ballast. We use white oak usually.

Mr. SHANKS.—What depth of cinder, over the ballast, is necessary to protect the cars and the ties?

Mr. ARMSTRONG.—Nine inches.

Mr. COLLOPY.—I think white hemlock ties will last from five to ten years.

Mr. SULLIVAN.—In speaking about your hemlock ties, we got about 5,000 one year, and dropped them in occasionally, and the third year we didn't pull them up, we shoveled them up, that is the difference. That was in Northern Michigan.

Mr. ARMSTRONG.—At what season of the year was the hemlock cut?

Mr. SULLIVAN.—I could not tell.

Mr. ARMSTRONG.—That makes all the difference in the world. If it is cut in the fall and up to the first of April, it will last a third longer, if not more; and if cut in the swamp, it is not white hemlock but is red hemlock and is not the right kind.

Mr. BURNETT.—In gravel, I find no trouble to change from 75 to 95 ties a day. A tie I have with us, put up with five or six inches of stone under it, after five years I raised up six inches more, and put gravel on top of it, and now that is a dry fine piece of road. Of course we have changed no ties, and for repair there has been no change only for cutting out under the rail.

Mr. LATIMER.—With how many men?

Mr. BURNETT.—Six men and a foreman.

Mr. PRESTON.—I would ask you one question in regard to the expense of keeping this surface once laid on good gravel or on broken rock. There has not been a great deal said about that, only about putting in and replacing the ties; but if the ties last seven years, and you have a steel rail on that, what is the expense of keeping the surface? You have more or less raising of the surface?

Mr. BURNETT.—It is equally as good a surface with three times the amount of labor with stone ballast as with gravel ballast, from the fact, as I said before, if a joint or centre goes down by a decayed tie, or the like, the elevation you give it is so little, it is almost impossible to tamp it, and the work is destroyed because it is tamped too hard; while in good gravel there is nothing of the kind to contend with. It can be tamped without trouble.

Mr. PRESTON.—Do you think the yearly expense is less upon the gravel than upon the broken rock?

Mr. BURNETT.—It is about 40 per cent. less.

Mr. ARMSTRONG.—What is the difference in expense in keeping the road-bed clear of grass and weeds in rock ballast?

Mr. BURNETT.—It is one-half less.

Mr. SULLIVAN.—In regard to keeping a good surface on rock, four years ago this fall the Pan-Handle road sent us a little rock ballast to try it. We put steel rails on it, and I contend it is better than gravel, for in winter time I found the north side of the track holds the frost in it longer than on the south side, the track will settle in the spring of the year, and consequently you will have to go over it. The rock ballast settles perfectly even. Upon that ground the rock ballast is far superior to gravel or cinder ballast. My choice is rock ballast, and next cinders, i. e., furnace cinders, if you can get them. We are to no expense in keeping it up. The fall weeds grew a little, but it died out, and we have been troubled with no weeds to amount to anything.

Mr. ARMSTRONG.—How long has the stone been in the track?

Mr. SULLIVAN.—Four years this summer.

Mr. BURNETT.—There is very little trouble in gravel settling underneath. We all must acknowledge that different soil controls the growth of weeds to a certain extent.

Mr. SULLIVAN.—In East and West roads the frost leaves the south side before it does the north.

Mr. BURNETT.—Yes; but the time is so little that in 15 or 20 days you can see no perceptible difference, and the north side is the same as the south.

Mr. SULLIVAN.—My experience is just this: In mud track,

cinder or gravel track the line may be the same in fall. How is it in spring—do you not find them worked out of line?

Mr. BURNETT.—Not in good gravel track.

Mr. SULLIVAN.—I find considerable trouble with it in the spring of the year.

Mr. BURNETT.—Perhaps you have not gravel enough.

Mr. SULLIVAN.—I leave no sags in it. I have plenty of ballast under it. I am not wanting for ballast, and my experience is, it will always work out of line; when you run a tie in 50 miles an hour, it must give one way or the other.

Mr. BURNETT.—The side of the track may heave, and I have even seen the south side heave as much as the north; and I have put under a two-inch prop on the south side of my track and an inch and a half on the north to make it level. Now you understand that is the peculiarity of the ground. There is a little water running, water on the south side, and none in the north, that heaves it.

Mr. LATIMER.—It would seem that the best track is that made up with stone ballast and built up with gravel, so that when you want to raise it a quarter of an inch, or an inch and a half, as the case may be, you can do it, but not so with stone.

Mr. WISWELL.—Will a clay embankment, with 12 to 20 inches of stone ballast, heave more than with gravel ballast?

Mr. BURNETT.—I believe stone will heave nearly as much as gravel. Stone is more open than gravel; then it must freeze the harder in the clay underneath. If the frost can pass through that broken rock, and get to the clay readily, the clay will freeze.

Mr. FULLER.—The track heaves up nearly as much in that case as with gravel ballast. It will heave stone ballast and track too.

Mr. SHANKS.—As soon as the frost strikes the clay, and gets down a sufficient distance, we then get the heaving. It is when it gets down into that clay that we get it. If we have eighteen or twenty inches of ballast, it won't get into the clay very much. I have dug down before now into the clay where it was raised six inches, and there was a body of clay frozen solid. Now the fact that stone ballast will keep that from heaving is absurd. The moment it gets into the clay it is going up. But if you have gravel, it will tend to keep the frost out to a certain extent.

Mr. PRESTON.—In cases of heaving, is it not caused by imperfect drainage as much as anything else? or, in other words, the ditches are not deep enough to take the water off.

Mr. SHANKS.—I have seen it in this way. Where the ditch was two feet deeper than the top of the road-bed, and a cat could run through the track.

Mr. PRESTON.—How big was the cat?

Mr. BURNETT.—I have a cut now about 250 feet long, and I assure you to-day that the water is running eight inches to the bottom of the tie, and I will assure you, too, that that never did heave.

Mr. WISWELL.—I will substantiate that statement. I have a rock cut with the water right up to the end of the ties. There were some cases where it would heave the gravel up through the ties, but the ties never went out of place.

Mr. HARDY.—We have a long rock-cut with plenty of water in it, in which we laid 1,000 feet of new steel. In winter that cut gives us plenty of trouble, and the question arose with me, whether I could substitute rock ballast and save wear and tear. Some have said that I could, but I don't exactly see it yet. If any one can find any way to show me how to make that cut good, with any form of ballast, I should like to know it. It is a difficult place with the water running all the time.

Mr. BURNETT.—I would lay some sewer-pipe, three inch sewer-pipe, then fill it with your gravel, right up to the end of your ties, and I know from experience that it would prevent a great deal of heaving where water comes from the top and has no chance to escape from the bottom.

Mr. HARDY.—In this case I do not imagine any sort of pipe would stand the temperature. We have a good many ledges of that character, making it a matter of figuring to a considerable extent to know how to manage in these cases.

Mr. LATIMER.—How deep is the rock below the bottom of your ditch?

Mr. HARDY.—It comes right out to probably two feet of the rail, and I presume, runs down several thousand feet below the bottom of the ditch. We lost a great deal of steel rail there I know.

Mr. ARMSTRONG.—On account of the rigidity of the road-bed?

Mr. HARDY.—I think that was it; this steel rail had been in service perhaps three years.

Mr. ARMSTRONG.—What proportion of wear do you consider in your four solid winter months (which you have, I presume) your steel rails suffer, compared with your other eight months in the year?

Mr. HARDY.—Well, I think the life of that steel was probably diminished in comparison about 40 per cent. It is impossible to make a close statement of it now.

Mr. BURNETT.—How has its wear this present summer compared with its wear of last winter?

Mr. HARDY.—That piece of steel was taken out last year before we had this last season which was particularly rough.

Mr. ADAMSON.—My experience is, that the rock is the cheapest ballast we have in cuts along the road. I approve of rock for one reason by my experience a tie lasts longer in rock, and I think it has less tendency to heave in winter, although in Indiana we don't have the frost to contend with that the gentlemen further east have. Another advantage in rock is that weeds and grass do not grow to attract stock where there are no fences. With us it is difficult to get good gravel. We have loam and clay mixed which the frost will heave more than it will rock. There is more expense connected with putting in ties and removing them than in rock or in sand, but I approve of it for the reason given.

Mr. BURNETT.—Suppose you could get good nice gravel, then how would it compare with loose stone?

Mr. ADAMSON.—I would certainly prefer it.

Mr. LATIMER.—I would ask Mr. Adamson if the rails do not wear more upon stone ballast than upon gravel ballast, or locomotive cinder?

Mr. ADAMSON.—I will admit there is less elasticity. If there is, then it would have a tendency to wear longer upon gravel than rock. The great trouble is, we have not enough ballast.

Mr. LATIMER.—How much longer would a rail last upon gravel and locomotive cinder than upon stone ballast—10 per cent?

Mr. ADAMSON.—No, I do not think that much.

Mr. LATIMER.—What would you think the best class of ballast would be to make a perfect bed? Would you not say pure gravel upon stone? Suppose you had a nice bed of gravel upon stone, would it not remedy the effect entirely?

Mr. ADAMSON.—Yes, it might.

The President here appointed Messrs. Charles Latimer, S. T. Fuller and G. T. Wiswell the committee to prepare and present subjects for discussion.

The question of place for next meeting was then called up again. After a little discussion the vote by which Cleveland was chosen was reconsidered and Chicago was selected as the place for the next meeting.

A recess was then taken until evening.

At the evening session, the Committee on subjects for discussion presented the following report:

Your Committee on Questions for discussion report the following:

First.—In elevating curves, which of the following methods do you recommend?

1. Depress the inner rail and continue the outer rail on the same grade as the tangent.

2. Elevate the outer rail and continue the inner rail on the same grade as the tangent.

3. Depress the inner rail one-half and elevate the outer rail the other half of the required elevation.

Second.—Cross ties: Best material; time of cutting; life; preservatives; size; manufacture; should they be peeled.

Third.—When you have a reverse curve of uniform degree, without connecting tangent, at what point will you have the maximum elevation of outer rail?

Fourth.—Frogs, crossings and switches.

Fifth.—What is the best pattern of hand-car?

Sixth.—The best form of rail-joints.

Seventh.—The best nut-lock—inerts and patterns.

Eighth.—The best method of laying rails as to joints.

Ninth.—Ballast unloading.

The report was received and the question of ties taken up first.

Mr. ALSEP.—It is admitted by all railroad men, I suppose, that a good white-oak hewed tie is better for all purposes than any other tie that is made, except of iron, or glass, or some new improvement that we know nothing about. It should be cut when the sap is down, to last long—in the winter time. I think timber is just like fur, it is prime at certain seasons of the year. A nine-foot tie is short enough; we are using a nine-foot tie on six-foot gauge. I think if it is a 4-foot-8½-inch, or five-foot gauge, it would not be any too long. It is quite an important point to have the bark taken off.

The average life of a tie is about eight years. Our statistics show it is shorter than that, I think. I cannot say anything particular as to what is best to preserve ties. Take a good sawed tie made of thrifty young timber, flat on two sides, and I don't see why it won't last as long as a hewed tie; if it is good thrifty young timber it will last as long as a hewed tie. The reason why a sawed tie does not usually last as long as a hewed tie is, it is generally made out of large timber, old and worn out worm-eaten timber. I think a hewed tie should not be less than an eight inch-face, six inches thick. I think a good sawed tie made out of good sound timber will last as long as a hewed tie, I mean a good straight grain tie, sawed with the grain.

Mr. ARMSTRONG.—You have not taken into consideration the cost. If you can get a chestnut tie of the same dimensions as an oak for 35 cents, and 50 cents for white oak, which do you think would be the best?

Mr. ALSEP.—The chestnut tie does not hold the spike as well. It would depend very much upon the elasticity of the surface.

Mr. BURNETT.—With a hemlock tie on a straight line at 20, and a white oak tie at 40 cents, which would be the most economical?

Mr. ALSEP.—That is a hard question to answer. I have had no experience in regard to hemlock ties. Speaking of a sawed tie, there are some objections to the sharp corners; but I am speaking of a tie sawed on two sides. You cannot tump a square-cornered tie quite as well.

Mr. HYLAND.—Our ties are mostly chestnut, and I should prefer a tie of about eight inches face, sawed on two sides. I think the white oak tie is the best. I should prefer to have them cut in winter, while the sap is out. The life I think is about seven or eight years. A chestnut tie will last from six to seven years. I have had no experience in preservatives. In regard to hemlock ties, I will say we do not consider them first-class ties. I would rather order chestnut ties at 40 cents than hemlock at five. Seven inches face down to six inches face is the size for a first-class tie. I came from the country where we have not a large quantity of timber, and a six-inch tie makes a fair tie with us, though I should prefer seven or eight. Eight feet, for the standard gauge, is about the standard length. I should rather have them sawed—sawed on two sides and peeled. I think a tie will last 10 per cent. longer if it lays a season before putting in the track than if put in green.

Mr. KENNEDY.—I do not understand that the gentlemen have given their ideas as to the time that timber should be cut. They say "when the sap is down."

Mr. HYLAND.—Well, from the first of November to the last of February.

Mr. KENNEDY.—I should not use February for a month for cutting timber for tie; it is certainly the worst month in the year to cut timber. If an oak is cut down in February and let lie on the ground, I will assure you that the bark will peel off in May. Now, I dealt in timber for 30 years before I went to railroading at all. My experience is that any time after the middle of January is a bad time to cut timber. I had my first observation in cutting timber from coopers.

The time that a cooper would go into the woods and cut a hoop-pole is my standard. You may go into the woods after the middle of August and cut your timber, and the bark will stick on the tie. The sap is all drying out, and will dry between that and the next year. It then all becomes hard and the sap is as hard as any part of it; but take an oak stick—a good tie—any time after the middle of January, and the sap is rotted off in one or two years. Split it up into small pieces, like those used for handles for tack-hammers, and you will find after three or four months, or in a very short time, it will be in a bad condition. I think you will find all kinds of timber are better cut in August, September and October, not going farther than up to December, and then it will last 20 per cent. longer than when cut later. As to the best kind of timber, I have had no experience only with chestnut and oak. We use oak; I have been used to that all my life. Oak in our country is very soft. I do not know as there is so much difference in the life of ties, perhaps two years. Oak will last perhaps eight, and chestnut will last six years. The wear on it is a good deal more than on oak. We use black walnut some, cherry to some extent and yellow pine, but oak is the best, the small second growth timber. We use six by eight, eight feet long, and a 5½ spike. The tie generally wears out before the spike comes through. We hew them. There is one or two years difference in life between a sawed and a hewed tie, out of the same timber; that has been my experience. To illustrate: take pine shingles, shave some, and saw some, and the sawed ones will not last as long by several years as the shaved ones. If properly hewed the pores of the wood are closed and a smooth surface is left. Sawing leaves a fuzz, and that fuzz accumulates dampness, and causes the timber to be penetrated by moisture sooner than otherwise. I hew or shave the bark off with an axe or drawing knife. You cannot peel it off.

THE PRESIDENT.—Mr. Shanks, let us hear from you.

Mr. SHANKS.—Mr. President, the best material for ties is no doubt white oak, but it has some objections, especially in a country where we have to do as much blocking as we have to do in some of these northern countries. In the first place you have to draw the spikes so often it makes rather an expensive tie. They will last longer than chestnut perhaps; but I should prefer chestnut because you can get your spike out without breaking it off.



I suppose the time to cut ties is when the sap is down. It makes some considerable difference in the lasting of the tie.

The life is about seven years, I should think, with chestnut. I think nine-tenths of the chestnut ties wear out; and we can show that the tonnage going over such a road as I am on will wear a tie out in seven years—cutting it off under the rail.

Preservatives are something I don't know anything about. I should prefer an eight-inch tie, eight-inch face, six inches thick, or such a matter, with length eight feet, which is our standard gauge, and a very fair length. About the manufacture, I don't think it makes much difference, especially with the chestnut tie, for, my experience has been that a chestnut tie does not rot from the top; if it does rot, it rots from the bottom, always. I don't think it makes any difference about the cutting into the tie, whether it is hewn or sawed. It may, however, with an oak tie. I should prefer to have them sided, and proper size timber, so as to have round sides. I don't like a square tie, by any means. I do not think you get as good wear as on a slab tie. We do not peel them, yet I think they ought to be seasoned. No tie should ever be put into the track until it is seasoned six months; it will last longer and the rails won't cut so fast as when put in green.

THE PRESIDENT.—We would like to hear from Mr. Fuller.

Mr. FULLER.—We have in use on the road 100 iron ties; and it seems to me that roads that can use stone ballast and steel rails, first-class equipment in every way, that the time is soon coming when they can afford to use iron ties. If railroad companies can afford to pay \$5,000 a mile for steel rails, they can afford to pay for iron ties. This tie we use has been used in winter, and all along in winter time the track was very rigid; but this tie is as elastic in winter as in summer. When the weight of the train is brought on to the rail, the rail is held in its place by two clamps. I have a photograph of a sample section of a track we have in use, and it certainly has elasticity enough. In regard to ties, material generally, of course every one would say oak ties are the best, but there are many sections of the country where we cannot have oak ties, and where they have them in the West the oak is of a coarse kind, not much better than chestnut—nothing to be compared with average oak. We have used on our road hemlock ties; we have a couple of thousand ties called the "triple tie," made of three pieces of hemlock plank in different shape. Sometimes the three pieces extend entirely across the track, and in some cases the piece inside of the rail is arranged so as to hold the track from slipping sideways. They are pinned together and dipped in hot tar. They have been used for five years, and every one is good. In our country a hemlock tie would not last one half that time. We have had some experience in Burnettizing ties. You may take a sweet gum or hard maple and Burnettize them, and they will last ten years; without that they will last about two years. We use a seven by seven tie. Generally, we have some nine-foot ties, and we have used what you call the spotted tie, planed off, and if you keep the tie close to the rail to avoid play that is quite an improvement. There is not the wear by the movement of the rails as in the ordinary rough tie just as you buy it. I have had no experience in creosoting ties. There is one thing rather an objection to Burnettizing: The chloride of zinc will rust iron quickly; a scale about  $\frac{1}{4}$  inch thick will come off in a short time, so that the bolts holding the block for the rail will become rusted. You will see on a Burnettized stick, a steel tool laid down on it will become rusted so you cannot rub it out. The price of the iron tie is about \$2.

Mr. SHANKS.—Is that iron tie a practical tie as regards frost?

Mr. FULLER.—I think it is. As it goes down deep below the ground, the shape of it is such that it is larger at the bottom than at the top, and it naturally heaves out of shape. There is no chance to block it if it does. When all of the tie is under ground, but just the clamp which clamps the rail is exposed. They are cast iron, all except the connection between the two parts, which is of wrought iron. I do not think I can give you the weight; it is something like 300 pounds, may be more; I would not say. I am not sure about the price. The castings made for us cost about 1½ cents, I think.

THE PRESIDENT.—There was some flange for holding on the tie, I think it was said.

Mr. FULLER.—Yes, there were the three pieces of wood, and the steel flanges pass down so that the weight of the train comes on them, and they slip down, the weight of the train brings the clamp together and presses snugly against the wood. It is not expensive to remove that wood. These cast-iron ties go cross-ways of the track and prevent it from spreading.

Mr. ALBOP.—Is there any danger of the ties settling down?

Mr. FULLER.—It is claimed there is none.

THE PRESIDENT.—I would like to hear from Mr. Stevens. I think he can tell us all about ties, especially about cedar ties.

Mr. STEVENS.—About all the experience I have ever had with ties has been with white cedar from the Eastern swamps.

The life of those is about eight years. They seldom rot with us, they wear out. I would like to have a little information in regard to hemlock ties. Our folks are going to creosote a large number of ties to use next year, and if any gentleman has had experience with that process, I would like to hear from him.

I suppose it is best to cut the timber when the sap is down, in the winter season, and that is the time, usually, when ties are cut. The life of a tie we consider about eight years. I never should care to see a tie over six or seven inch face, or over seven inches thick, yet we had a good many overgrown ties that I would not buy. A six-inch face is my idea, not over seven. I should like a uniform thickness, and they vary greatly in this. We cut from 5 to 10 per cent. of five-inch ties, which we throw into posts. We make three sizes in our surveys, when they come to us, five, six and seven; six and seven we use in the track, and five in posts; sometimes we put them into sidings.

They need not be seasoned; that is our experience. I suppose, however, they would wear better if kept six or eight months after being cut; they would harden up, perhaps, so the rail would not cut them. The ties they cut this winter we shall get along early in the spring for another spring's use. I do not know as there is much difference between sawed and hewn ties; they do not rot, apparently; but I presume a hewn tie is better. It is very few sawed ties we get; we have them about two feet apart, from centre to centre, and we use gravel ballast altogether. Some parts of our road are very poorly ballasted; we are lacking in ballast.

Mr. ARMSTRONG.—Do you find any trouble in a cedar tie, in the spikes starting?

Mr. STEVENS.—No, sir.

Mr. ARMSTRONG.—What is the heaviest curve you have cedar ties on?

Mr. STEVENS.—We have no very sharp curves on our main line. On our ordinary turn-outs, sometimes we would put a rod on and do not experience any difficulty in our main line. We have two curves as sharp as eight degrees.

THE PRESIDENT.—I would like to hear from Mr. Bishop, of the Pittsburgh Railroad, in regard to ties.

Mr. BISHOP.—I think there is no more room to work on; there has been so much said. I have inspected, perhaps, 60,000 ties a year during the last five years. White oak ties, it has been said, are the best, but we have chestnut, which is about all we do use; some hemlock; principally chestnut. The length of life depends upon the amount of traffic, I think. I would cut when the sap is down, most any time during the fall and first of the winter to spring. I am not positive as to preservatives. The size I would put from six to nine or ten inches.

Mr. FULLER.—What proportion of smaller ties, smaller than your standard tie, would you take?

Mr. BISHOP.—We take five-inch face and upward. If they are six inches thick, five, six or seven inches face, they all go in at one price, 35 cents; less than that, 18 cents; less than that, we make fence posts of. The proportion we would take would depend upon the kind and quality. I have inspected ties where we would get eight or ten hundred with very few culls, and I have inspected 1,200 ties which gave 700 culls.

Mr. FULLER.—You took one as readily as the other?

Mr. BISHOP.—Certainly. On our roads for the last five years we have been laying new sidings, using number one ties for the joints, and filling up with seconds. It is my opinion that with the same quality of timber and same sized stick there would not be 24 hours difference in the lasting time, whether sawed or shaved, for this reason: They cut out and do not rot out; the old ties we cut into are just as sound as ever. I never had much experience in peeling, we always put them in with the bark on. The second year they begin to peel, and it seems to me it is a question of about a year, leaving the bark on or not. In favor of leaving it on.

Mr. BURNETT.—This creosote business I do not know anything about, but on our road we Burnettized a two mile track—and just what it cost I do not know—yet I can say that they were thoroughly satisfied that it did not pay. Whether those ties were Burnettized we have no way of knowing. We had no superintendent to see what process they went through, we simply took the company's word for it. If they were properly Burnettized, we are thoroughly satisfied that it does not pay. That is our experience in Burnettizing hemlock.

Mr. STEVENS.—Have any gentlemen had any experience here with hemlock creosoted?

Mr. LATIMER.—I have had some information. At the last meeting of the American Society of Civil Engineers, Mr. Andrews, of Boston, brought to the meeting some pieces of creosoted ties taken from the track of a road in England—I have a piece on my desk in my office—and the tie he had on exhibition had been twenty years in track, made of birch creosoted; and it was taken just at random from the track. A number of English engineers answered the letter of Mr. Bogart, Secretary of the American Society of Civil Engineers, upon that subject, and every one of them gave the very highest opinion on the method of creosoting. I think 15 years a very moderate age for those ties. That was altogether in soft woods. They had no hard wood at all. I have been investigating the method of preserving timber a little, and there are four methods: The old method of Burnettizing, the method of creosoting, the method of Kyanizing and the Thilmeny method, which is using sulphate of baryta. I have bought 10,000 of this kind during the past few years. They are preserved at Defiance, O., and all kinds of timber are used indiscriminately, because they claim that one timber is as well preserved as another, and it matters not which you use. I order to satisfy myself of this process, I went up with the parties who had the process, and saw seven or eight ties in the Cleveland & Pittsburgh road at Cleveland. They had been in seven or eight years, and I saw no perceptible rot in them. I did not examine particularly the question of wear, but I cut them with my knife and found them very hard. They were soft-wood ties. They claim that they are made much harder and heavier; as to their being heavier, I can answer to that, when they come out of the vat, they are remarkably heavy. The Thilmeny process is used in Boston now at the Charlestown Navy Yard, and I understand, used by the government. Mr. Andrews, of Boston, claims that the creosoting process—his process—is the best; and the vote of the English engineers is overwhelming. In regard to hemlock ties, creosoted, I should say they ought to last 20 years. The piece of tie on my desk, which I have at home, smells strong of creosote now.

Mr. STEVENS.—That came out of a bridge?

Mr. LATIMER.—No.

Mr. STEVENS.—How did it look where the wear came?

Mr. LATIMER.—The English method of laying rails is different from ours. The question would not be in the lasting of timber, but the wearing out where the rail lays. The English have a chair for the rail, and there is no chance for it to cut in as when rails come right on the tie. Now, if we lay our ties as they do, so that the rail will not come on to the tie from the pressure, our ties will last as long as theirs, provided they are treated the same, that is, about 20 years or more. The ties bought at Defiance cost 50 cents delivered at Mansfield, Ohio. I think I paid 35 cents. For the Thilmeny process the first lot cost us 15 cents and the second lot 20 cents. How long they will last I cannot tell; but, in 10 years from now, if you will inquire of the road-masters on the Atlantic & Great Western Railroad, they will tell you of the result. We have from 10,000 to 20,000 in the track.

Mr. STEVENS.—Perhaps our friend Hardy can tell us what the wear of ties really is where his double-headed railroad is laid.

Mr. HARDY.—This question of creosoting ties is going to be a great thing for our country. It is a great question, which, if you could answer next year, would be of some satisfaction. I believe the creosoting process in Boston costs 20 cents a tie. They have cried very hard to have us invest in the experiment. I do not see why there should not be the same difficulty about the wearing of the ties that we have with chestnut. Mr. Andrews claims that the water settles under the rail and rots it. I am more inclined to think it is the wear that cannot be avoided, with the traffic over it. I do not see why it should not apply to ties, creosoted, but this experiment may be a benefit to railroads generally.

Mr. WISWELL.—On the subject of ties I will say a word. I have not had experience enough in chestnut ties to say anything about them, although they are my choice. As we live in a country where the ground heaves and track needs blocking, we find a good deal of trouble in pulling the head of spikes off in white oak. Ties 8 feet long, 6-inch face have been our standard until now.

We take no ties now unless they are hewed, 8½ feet long, seven inches thick, seven inches face, and cut in the fall of the year. We pay for the former ties 35 cents apiece; the present size we are offering 45 cents apiece for. We take a smaller grade of ties for the use of side tracks, 10 per cent. small ties falling below the standard, for which we pay 30 cents down to a certain size. We do not take any size less than six inches thick.

Mr. ARMSTRONG.—I would like to ask of the road-masters present—we have heard some say six, some seven, some eight inches face—how many ties would they put to the mile

on that basis, or do they make any difference when the different sizes are used?

Mr. PRESTON.—I would say, as far as my experience goes, if they are a smaller kind we put them in nearer together, we calculate to get about the same amount of wood under the rail.

Mr. ARMSTRONG.—So really the cost is about the same?

Mr. PRESTON.—The difference is not in the cost, I think. It would take about the same amount of wood.

Mr. ALBOP.—It takes more spikes, of course!

Mr. PRESTON.—Yes, sir.

Mr. WISWELL.—I would like to ask Mr. Albop what advantage he gets in a nine-foot tie over an eight-foot tie?

Mr. ALBOP.—A nine-foot tie, if there is a road-bed that will bear it, has more surface, is longer, and will hold up a greater weight. Our sawed ties are nine-inch face; hewed, eight-inch face. We do not take any ties made from old or worm-eaten timber, unless we take them for about 10 cents each. We take only green, first-class timber for our first quality of ties.

Mr. STEVENS.—Do you use nine-foot ties for a standard-gauge road?

Mr. ALBOP.—Yes; I would take it for most any road of not less than 4 ft. 8½ in., or over 6 ft. gauge. The Lake Shore & Michigan Southern uses that altogether, I believe. We use nine-foot ties.

Mr. LATIMER.—We use it for both gauges.

Mr. WISWELL.—Will an eight-foot tie cut off under the rail any quicker than a nine-foot tie?

Mr. ALBOP.—We do not have any trouble with the ties wearing out where the rails are good.

Mr. WISWELL.—Would you recommend in a country where the tie is cut off having the length any longer than eight feet, inasmuch as you have to pay more for it?

Mr. ALBOP.—There is no doubt that the longer the tie is the more surface you have, and the easier it is to keep it up. The Convention then adjourned until the next morning.

#### Proceedings of the National Association of General Passenger and Ticket Agents.

The official report of the special meeting held in New York, Sept. 12 to 16, shows that the number of members in the Association at that time was 103, of whom 79 were present, and 36 had become members since the spring convention.

Mr. F. E. Fowler, of the Missouri Pacific, was appointed a member of the Executive Committee to fill the vacancy occasioned by the death of Charles E. Follett.

Changes since the spring meeting reported were the resignation of S. D. Hubbard, of the Western, of Alabama, the appointment of J. C. Ernst to succeed H. P. Ransom, on the Kentucky Central, the change of E. A. Ford from the St. Louis, Iron Mountain & Southern to succeed C. E. Follett, deceased, on the Vandalia Line, the appointment of O. W. Ruggles, late assistant, to succeed Mr. Ford on the Iron Mountain, and the retirement of J. Chittenden from the Long Island Railroad.

A resolution was passed that the special meeting take the place of the regular meeting which was to have been held at Louisville, Sept. 16.

An amendment to the constitution, proposed at the special meeting, was then passed, providing that no one individual in the Association should cast more than one vote, however many roads or corporations he might represent.

The Committee of the Whole on Passenger Rates having reported Saturday afternoon that it could not proceed with the making of rates under the by-laws, an amendment to the by-laws was passed unanimously, which provides: "That the sum of the locals by the short line shall constitute the unlimited rate, except when the locals of the longer line make the rate; then the short line shall adopt this rate."

The following was also adopted unanimously: "Resolved, That the unlimited rates to and from New York being established on the basis of combination of locals, the rates to and from intermediate points may be graded thereon at such less proportionate rates as may be agreed upon by the lines in interest, that shall not interfere with, reduce or nullify these rates."

The Committee of the Whole on Rates rose and reported Monday morning, and then the votes by which the two resolutions above were passed were reconsidered.

Tuesday morning the Committee of the Whole on Rates reported that the rate sheet was but partly completed, and asked that, to save time, the completion of it be referred to the Secretary, with authority to call in the aid necessary to complete it, and this report was adopted.

Cincinnati was chosen the place for holding the spring convention, by a vote of 25 to 8 for Philadelphia.

The Chair appointed C. S. Cone, Jr., of the Ohio & Mississippi Railway, to fill a vacancy on the General Committee, which appointment was confirmed by the Association.

Previous to the consideration of "unfinished business," the President spoke as follows:

#### PRESIDENT'S ADDRESS.

As the convention will see, there is a good deal of business to be attended to in acting on the recommendation of the General Committee, and in order to get through with it as promptly as possible, the Chair suggests that it can be best done by a strict observance of the rules established for the conduct of this Association, which, in the absence of any special rules, are those given in our rules of order. The greatest waste of time in our conventions heretofore has been by members addressing each other on subjects before the convention, instead of addressing the Chair and confining their remarks strictly to the question before the Association.

When one member has secured the floor, and has been recognized by the Chairman, it is not proper for any other member to interrupt him by proposing questions to him directly, or by a private conversation which will disturb him in his remarks; and while considering this matter of unfinished and miscellaneous business, the Chair has to request that no member will attempt to speak, except to a pending question; and a question can only be brought legitimately to the convention through a resolution properly offered, seconded, and stated by the Chair.

The duties of the Chair are to represent the Association as a whole, without regard to the particular interest which he may represent, or the interest that any other member may represent, and to see that every member has equal rights, according to the rules by which the Association is governed; and I offer these suggestions so that if it should be necessary to call any member to order, and insist on a strict observance of the rules, the Chair may not be considered as acting arbitrarily in any individual case, but perfectly impartial throughout.

Many of the older members of the Association have frequently remarked, and expressed regrets, that it became absolutely necessary for them to be placed on record as having offered greatly more than a majority of all the resolutions and propositions made for the consideration of the Association, and have expressed it as their desire that the younger members of the Association should take more interest in its deliberations, and come forward in conjunction with older members with such propositions as may tend to the general weal, and enter fully into the discussion of all questions brought to the attention of the Association.



New members must understand that in the organization of this Association and its rules, it is not necessary that any one should be placed on probation before he secures all the rights of full membership. When a gentleman presents his credentials, and they are properly passed upon, he then becomes a full-fledged member and is entitled to all the rights and privileges of any other member; and the Association will prove more successful if every member present feels free to offer such suggestions as he may think proper.

The report of the General Committee was then received, and, on motion, was taken up and acted upon by sections.

## REPORT OF THE GENERAL COMMITTEE.

Your General Committee, in accordance with their instructions and duties, beg leave to submit the following report:

We have examined the proceedings of the old Association, and the reports of the Southern and Western Associations to the old Association and bring forward and recommend for adoption the following:

1st. It is the sense of this Association that the issue of railway tickets by firms or individuals cannot be recognized; and as constituents of this Association, we agree to cancel any existing arrangements not in harmony with the spirit of this declaration.

2d. Limited tickets shall be confined in their use for passage not exceeding 24 hours over and above schedule time to destination, and the time allowed on such tickets shall be reckoned from the actual date of sale.

3d. When a party holding a limited ticket is unable to complete his journey by reason of sickness, or other sufficient unavoidable delay, any unused portion of such ticket may be taken up by a road in interest, and a regular ticket given in exchange over the same route, charging the party the difference between regular and limited rates from such point. The road taking up such ticket may return the same to the road which issued it, and the proportion of rate due on such coupons shall be reported to the road returning same.

4th. The issue by any road, constituent of this Association, of a notice calling attention to the fact that certain tickets of its issue should be refused for passage, because of their having been stolen or altered, or that counterfeit or spurious tickets purporting to be of their issue are being circulated, shall discharge said notifying road from any claim for payment to any connecting lines for any such specified tickets which shall be accepted for passage after the receipt of such notice. *Provided*, that if said notifying road request in said notice that on presentation of any of said specified tickets, they shall be dishonored, or the holder thereof shall be arrested or detained, then all legal liability for such arrest or detention, and all costs, damages and other expenses incident thereto, shall attach to and be assumed by said notifying road.

5th. This Association expressly declares that the *Travelers' Official Guide*, and the *Rand & McNally Official Railway Guide and Hand-Book*, are the only authorized sources of information to the public in respect to the time-tables and lists of the officers of passenger and accounting departments of the roads herein represented, and we will use all honorable means to promote the success of said official railway guides, by encouraging their sale upon our respective roads; and the Secretary is hereby directed to give such notice as may be necessary in order that the public may understand the authentic source to which they may look for information.

6th. In checking baggage on any ticket, the "B. C." punch shall be used only on the coupon which will be taken up by the road which delivers the passenger at the point to which the baggage is checked; and baggage shall be checked on a limited ticket to its final destination only, and the ticket punched only on the contract.

7th. When new forms of tickets are prepared and placed on sale, a sample of same shall be sent to each road in interest.

8th. Tickets shall be reported as sold to the roads over which they read, and they shall not be reported to roads over which they do not read, even if they are honored over such roads, except by the consent of the road or roads over which such tickets read.

9th. Baggage shall be checked only by the route over which the owner's ticket reads, without any deviation, and if it cannot be checked through, it shall be checked as far as possible by the same route; and the members of this Association shall instruct their general baggage agents that the practice forbidden by this resolution must be absolutely stopped.

10th. The Secretary of this Association is hereby authorized and instructed to collect and publish in pamphlet form, at the expense of this Association, as soon as possible, the official stop-over regulations of the various railroad and steamboat lines in the United States and Canada, one or more copies of which shall be furnished to each coupon-ticket seller in the United States and Canada, for his information and instruction; and the Secretary is also instructed to obtain and compile for the use of this Association such legal and other obstacles as may be in the way of adopting a uniform system of stop-over checks.

11th. The President is hereby requested to appoint a committee of five members, to submit for consideration such style of tickets, both local and through, limited and unlimited, as will, in their judgment, afford the best protection against forgery, alteration or other fraudulent use. Said committee to report at the next regular meeting of this Association.

12th. Every line represented in this Association shall require its baggage agent to attach to the strap check of all extra through baggage a tag, on which shall be stated the amount of extra baggage money collected for the carriage of such baggage from starting point to destination; and we hereby agree to report to each line interested, from and after Sept. 1, 1879, its proper proportion of such collections, on the basis of regular ticket divisions.

13th. Whereas, it is not denied that the practice of paying commissions on the sale of tickets is demoralizing to railroad employes, useless to the public, entails enormous losses on the companies, and therefore ought to be discontinued; we, the members of this Association, hereby pledge ourselves to give the movement for the abolition of all commissions our hearty support, and we will do all in our power to aid our managers in eradicating the evil.

14th. Notices of changes of rates by any road that affect through rates shall be made to take effect on the first of a given month, and shall be forwarded so as to be received by connecting roads on or before the 20th day of the preceding month.

15th. A stenographic reporter shall be employed by this Association, whose duty it shall be to report the proceedings, which shall be revised and published by the Secretary, under the direction of the Executive Committee.

16th. To maintain tariff rates, to prevent reckless and foolish competition, to preclude collusion with ticket-scalpers, to restrict sales to regularly-authorized offices, and to put a stop to the constant depletion of passenger receipts arising from these causes, it is the sense of this Association that the following rule should be adopted at all competing points, viz., that the lines terminal at such points shall redeem, at full tariff rates, any tickets of their issue purchased outside

of their regular corporate offices, or any tickets purchased at reduced rates at their own offices.

17th. It is the sense of this Association that all tickets sold at less than the highest regular first-class rates shall be limited.

18th. We have examined a number of methods for simplifying, improving and harmonizing the system of collecting and reporting excess baggage, and we believe that the system known and designated as the "Triplicate Excess Baggage Card" is the best that has been presented to us, and we therefore recommend its universal adoption by this Association.

19th. Your committee beg leave to further recommend, that to reduce and simplify forms of tickets, so far as practicable, only two kinds or classes of tickets for general use be hereafter issued, viz.: 1st and 2d class.

20th. Between competing points and on all classes of through business, the excess baggage rate per 100 lbs. shall be computed as follows, viz.: Whenever the lowest first-class unlimited ticket fare from starting point to destination is \$15 or less, 15 per cent. of that rate; more than \$15 and less than \$20, 12½ per cent.; \$20 and over, 10 per cent.

21st. It is the sense of this Association that the payment of commissions to land agents on ticket sales is demoralizing in its tendency, and should be discontinued by all lines represented in this Association on and after Oct. 1, 1879.

Your committee being unable to agree as to what recommendations should be made upon the following subjects, suggest that the Association take them up and act thereon:

A. The abolition of round-trip tickets.  
B. The transportation of theatrical parties and their baggage.

C. Uniformity in style of contract on all classes of tickets.

D. Uniformity in style and terms of stop-over checks.

All of which is respectfully submitted.

E. A. FORD, Chairman,  
J. WALDO,  
S. S. PARKER,  
E. GALLUP,  
C. S. COLE, JR.,  
General Committee.

Messrs. Johnson and Dorsey, members of committee, absent.

The following is the result of the action of the convention in connection with the report of General Committee:

Sections 1, 2, 3, 4, 5, 6, 7 and 8 adopted.

Section 9. The following amendment was moved: "And extra baggage money shall only be collected to the point to which the baggage is checked." Adopted.

Section 10 adopted.

Section 11 lost.

Section 12. Yeas and nays were called for, with the following result:

Yeas—Allen, Atmore, Chandler, Connor, Cummings, Dadmun, Daniels, Danley, Dunham, Ettinger, Ford, Gallup, Houston, Howard, Kimball, Mass, Myers, McDonnell, Nathan, O'Brien, Parker, Shattuc, Smith, A. J., Smith, E. H., Thrall, Townsend, Taylor, Van Benthuysen, Waldo, Wood, Wishart, Wrenn and Zimmermann.

Nays—Boyd, Cary, Snow and Wentworth.

The section was therefore declared adopted by a vote of 33 to 4.

Sections 13, 14, 15, 16, 17 and 18 adopted.

Section 19 lost.

Section 20 adopted.

Section 21. Yeas and nays were called for, with the following result:

Yeas—Atmore, Boyd, Cary, Chandler, Connor, Dadmun, Daniels, Danley, Dunham, Ettinger, Ernst, Ford, Gallup, Houston, Howard, Kimball, Mass, McDonnell, Nathan, O'Brien, Parker, Shattuc, Smith, A. J., Smith, E. H., Snow, Thrall, Taylor, Van Benthuysen, Waldo, Wentworth, Wood, Wishart and Zimmermann.

Nays—Nil.

The Chair then announced the unanimous adoption of the section.

In connection with the subject matter "A," the following resolution was offered:

"Resolved, That it is the sense of this convention that it is inexpedient to adopt any rule governing or prohibiting the issue of round-trip excursion tickets."

Carried.

Subject matter "B": The following resolution was offered:

"Resolved, That for the transportation of theatrical people, and their baggage, the same rates be accorded or made as is made for other first-class business."

Lost.

A further resolution was offered, viz.:

"Resolved, That the theatrical rates be made three-fourths of the General Ticket Agents' first-class unlimited tariff sheet rate between all common points, for parties of not less than six persons on one limited ticket."

Laid on the table.

A motion was then made that the subject of theatrical rates be not considered, which, receiving a second, was carried.

Subject matter "C": On motion, this matter was not considered.

Messrs. Myers, Kimball and Dadmun were, on motion, appointed to draft resolutions on the death of the late Charles E. Follett, and they reported the following:

"Whereas, The absence from our midst, on this occasion, of the familiar form and genial face of one of the oldest and most respected members of this Association, painfully reminds us of the recent death of Charles E. Follett, late General Passenger and Ticket Agent of the St. Louis, Vandalia, Terre Haute & Indianapolis Railroad; therefore, be it

"Resolved, That we desire to express the heartfelt sorrow we feel, and to place upon the permanent records of this Association some token of our appreciation of the loss this body and the railway passenger service of the country has sustained in his death. In him there were added to natural abilities of a high order, liberal culture, long and varied practical experience, sterling integrity, and that warmth and loyalty of heart which attached the many friends of Mr. Follett to him by ties that only death could sever.

"Resolved, That we tender to his associates in the service of his line our sympathy for the loss of a co-laborer, who had devoted many years of the prime of life and the maturity of his gifts to the interests of his company, with strict honesty, fidelity and signal success; and to his widow and children, in their bereavement, we extend our sincere sympathy and condolence, with the assurance that his old associates will always cherish, with love and respect, the memory of the departed husband and father.

"Resolved, That the Secretary be requested to forward a copy of these resolutions to his family."

Adopted unanimously.

The section of the by-laws which provides that they may be changed by a three-fourths vote was changed so as to require that the order of business which requires the first two days of each regular meeting shall be given to making rates shall not be changed except by unanimous consent.

The Secretary was authorized to employ a stenographer to report the meetings, and the Secretary and Executive Committee were authorized to fix the payment for his services.

A vote of thanks was tendered to the Windsor Hotel for the use of a room for the meeting and other courtesies.

## RAILROAD LAW.

## The Pittsburgh Riot Damage Cases.

In Pittsburgh, Oct. 6, the Pennsylvania Supreme Court rendered its decision holding the county liable for losses on property damaged or destroyed in the great riot at Pittsburgh in July, 1877. The test case in which the decision was given, was that of John Gibson, Son & Co. against Allegheny County. This case, with others, was tried in Beaver County, having been certified there from Allegheny County, and it was decided against the county by the Beaver Court. The Supreme Court affirms the rulings of the court below, and, while the opinion is written in this case, other similar cases tried at Beaver will be governed by it. The liability of the county under the law of 1841 came under review. The point having been made by Allegheny County that the present case was not such as was contemplated by the framers of the law, that it amounted to an insurrection, spreading through several states, and, further, that the damage all occurred after the intervention of the state authorities, the Court says: "The argument upon this branch of the case has failed to point out just what kind of riots were contemplated by the framers of the act of 1841." As regards the intervention of the state military the Court says: "We see no evidence of any serious attempt upon the part of the local authorities, to suppress it at the time of its commencement. A feeble attempt was made by the sheriff, resulting in the enrollment of some half-dozen deputies, but there was no proclamation calling upon the body of the county to come to his assistance in preserving public peace. No one doubts at this day that, if proper effort had been made at the proper time, the mob could have been held in check. No one doubts that it would have been, had the citizens of the county realized that they were responsible for the loss. The law will not tolerate the spectacle of a great city looking on with indifference while property to the value of millions is being destroyed by a mob. To prevent just such occurrences was one of the objects of the act of 1841. The fact that the state, when called upon, rendered its assistance, and sent a portion of its military to the scene, does not absolve the county from its implied obligation to preserve the peace, nor from its responsibility for neglect of that duty. Were it otherwise, it might be for the interest of the municipality to increase the size of the mob."

This decision is an important one, governing a large number of cases, and it will make Allegheny County responsible for a very large amount. It is said that the county authorities will try to arrange some general compromise settlement with the claimants.

## Agent making Unfounded Arrest.

An agent of the Burlington & Missouri River Railroad Company went before a justice and swore to a complaint that one Miller had committed a burglary and upon this Miller was arrested. Apparently, though the official report does not say so, the burglary was charged to have been upon the company's buildings. However that may have been, the complaint, on inquiry, was found to be false and malicious, and was dismissed for that reason. Miller then sued the agent as an individual, but the company, for damages for the arrest. *Held*, that the company could not be charged. A corporation is liable the same as a natural person for the tortious acts of its servants or agents, in the course of their employment. But to make the corporation liable for the wrongful acts of employes, though done in obedience to the commands of its officers, the act must be connected with the transaction of the business for which the company was incorporated. The officers' powers are limited within the scope of the purposes of the corporation. When an injury is committed by an employe of a corporation wilfully and of his own malice, and not in the course of his employment, the corporation is not bound by his acts. It is not in the general line of duty of an agent of a railroad corporation, as such, to make complaints of commission of crimes; and if it is so in a particular case, that must be specially shown, to warrant charging the company with damages if the agent makes a false complaint. *Miller v. Burlington & Missouri Railroad Co.* 8 Nebraska Rep., 219.

## Paying Stock Subscription.

The charter of the Peach Bottom Railroad Company prescribed that "no subscription shall be valid unless the party making the same shall, at the time of subscribing, pay five dollars on each and every share, for the use of the company." The commissioners to open the books allowed a subscriber to give his note for the five dollar installments, instead of exacting the cash. The legality of their doing so was drawn in question; and the Pennsylvania Supreme Court decided against it; saying that the language of the charter was plain and emphatic, and its manifest object was to protect the public against fictitious corporations with capital stock subscribed, perhaps by irresponsible persons, and not a dollar thereof paid in. The commissioners had no authority to dispense with the actual payment of the required sum. A demand note, such as was given by the subscriber in this case, is not money; it is only a promise to pay money at a future time; and, perhaps, may never be complied with. *Boyd v. Peach Bottom Railroad Co.* 20 Albany Law Journal, 38.

## Land Damages.

The St. Paul & Pacific Railroad Company commenced, in 1870, proceedings to condemn lands for its road; but for some reason or other making an assessment of the damages to be paid was delayed a number of years. Meantime, the company entered upon the lands desired, constructed a road-bed, and laid ties and rails. When at length the commissioners met to determine the value of the lands taken, the land owner claimed that as the land was still his, the improvements which the company had made upon it, without leave, had become his property; and that he was entitled to be allowed not only the value of the land in its original condition, but also the value of the road-bed, ties and rails. *Held*, that the claim was untenable. The question of damages in these cases does not depend upon strict title to property, as in an action of ejectment, but upon what justice and sound reason requires a company to pay to the landowner to compensate him for the taking his land. *Greer v. St. Paul & Pacific Railroad Co.* 20 Alb. Law J., 228.

## A Railroad Train as an Ambush.

An engine-driver on one of the Scotch lines reports that he has noticed that certain hawks of the merlin or "stone-falcon" species make use of the passing of the trains for predatory purposes. They fly close behind the train, near the ground, partly hidden by the smoke, but carefully watching for the small birds which, frightened by the train as it rushes roaring past, fly up in bewildered shoals; the merlins then, while the little birds are thinking more of the train than of lurking foes, swoop on them from the ambush of the smoke, and strike them down with ease. If they miss, they return to the wake of the carriages and resume their flight and their hunt. They can, it seems, easily keep pace with an express train, and outstrip it when they please.





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## EDITORIAL ANNOUNCEMENTS.

**Passes.**—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

**Addresses.**—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

**Advertisements.**—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN OPINIONS, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

**Contributions.**—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

## FIFTY YEARS IN THE HISTORY OF LOCOMOTIVES.

Last Monday, Oct. 6, it was just fifty years since the celebrated trial of locomotives was made on the Liverpool & Manchester Railway. In view of this semi-centennial anniversary, we may, perhaps, be excused for telling the story of this trial, which has been told so often, over again; after which some comments will be added on the advance and the nature of the improvements which have been made in locomotives since that time. In rehearsing this chapter of history, which is told in a very interesting way in Wood's Treatise on Railroads, but which is too long for these pages, a large portion must necessarily be simply a repetition of what is given in that book, which will sometimes be reproduced in the language of the author, and sometimes modified to suit the compass of an article of this kind.

In the spring of the year, 1829, the Liverpool & Manchester Railway had made considerable progress toward completion; and it became necessary that the directors should determine as to the power that should be employed upon it, for the conveyance of merchandise, etc. They had previously appointed a deputation of their body to visit other railroads in England, to examine the motive power in use on them. The only conclusion which they came to was that horses were inapplicable, and therefore the question then was whether fixed or locomotive engines should be used. In order to determine which of the two was the most suitable, the company employed two engineers, Mr. Walker and Mr. Rastrick, carefully to examine and report upon the working of the two species of mechanical power employed on other English railroads. They reported the weight and "abso-

lute quantity of work done by five different locomotive engines," which are given in the following table:

RAILROADS.	Description of Engine.	Weight of engine.	Gross load including weight of engine, hauled in summer at 10 miles per hour.
Stockton & Darlington	Engine on six 4-ft. wheels, made by Timothy Hackworth.	15	43½
Stockton & Darlington	Engine on four 4-ft. wheels, worked by Jas. Stephenson.	12	32
Killingworth Colliery.	Engine on four 4 ft. 2 in. wheels, under Mr. N. Wood's care.	10½	33½
Hetton Colliery.....	Engine on four 3-ft. wheels, under the care of Mr. T. Wood.	10½	23½
Middleton Colliery, near Leeds.....	Engine on four wheels rack rail, under the care of Mr. Blenkinsop.	6½	19½

The two engineers reported that the estimate of the powers of the engines was formed upon those in actual use; that great improvements were making in them, and that it was fair to anticipate other and greater improvements in the locomotive than in the stationary system. The directors were, however, still unsatisfied, and finally on the 20th of April, 1829, they offered a premium of £500 for the best locomotive engine, subject to certain stipulations and conditions. These were as follows in a condensed form: The engine must consume its own smoke; must weigh six tons, and be capable of drawing on a level a gross weight of twenty tons, including tender and water-tank, at the rate of ten miles per hour, with a pressure of steam on the boiler not exceeding 50 lbs. per square inch; the engine to have two safety valves, and the engine and boiler to be supported on springs and rest on six wheels; the weight of the engine in working order not to exceed six tons, and one of less weight would be preferred if it should draw a proportionate weight. The company was to be at liberty to put the boiler, fire-tube, cylinders, etc., to a test of a pressure of water not exceeding 150 lbs. per square inch; the price of the engine not to exceed £550 delivered on the railroad.

Subsequently the 6th of October, 1829, was fixed for the trial, and Mr. Rastrick, Mr. Kennedy and Mr. Wood were appointed judges.

On the day appointed the following engines were entered for the prize:

The Rocket, by Mr. Robert Stephenson.  
The Novelty, by Messrs. Braithwaite & Erickson.  
The Sans Pareil, by Timothy Hackworth.  
The Perseverance, by Mr. Burstall.  
The Cycloped (a horse machine), by Mr. Brandreth.

The trials were made on a level piece of road about two miles in length, at a place called Rainhill. Each engine was intended to run back and forth over this distance, and make ten trips, which was considered equal to a journey of 35 miles; an eighth of a mile at each end was allowed for stopping and starting.

The first two or three days were occupied in preparing the engines for the contest, and it was then determined that each should be tried separately and on different days.

The "Rocket" was tried first. It weighed 4½ tons and drew a load of 17 tons, including its own weight, and made the ten trips, or 35 miles, in 1 hour, 48 min. 33 sec. The average speed was about 15 miles per hour, and the maximum speed a little over 29 miles per hour.

The "Sans Pareil" weighed 4 tons 15½ cwt. The weight of the entire train was 19 tons 2 cwt. On the eighth trip the pump "got wrong," and the water getting low, a fusible plug was melted out, which put an end to the trial. The maximum speed of this engine was 22½ miles per hour.

The "Novelty" weighed 3 tons 1 cwt., and the total load of train 10 tons 14 cwt. On the first trip it burst a feed-pipe, which ended the experiment for that day. It attained, however, a speed of 17½ miles per hour. A few days afterward another trial was made, but on the second trip "some of the joints of the steam generator gave way," and the engine was then withdrawn.

The "Perseverance" met with an accident in its conveyance from Liverpool, and having been found on trial not to be adapted for the purposes of the company, it too was withdrawn, and the prize was awarded to the "Rocket" of Mr. Stephenson, as having performed all the conditions and stipulations required of the competitors.

We give herewith an engraving, fig. 1, of the "Rocket," copied from Wood's Treatise, and another, fig. 2, which appeared in the Railroad Gazette of Aug. 18, 1876, and which was copied from one published in

the Engineer about the same time. This engraving represents the "Rocket" as it is now exhibited at the South Kensington Museum. The Engineer, at the time the engraving was published, seemed to be very skeptical about the identity of much of the old engine and the new, and seemed to be of the opinion that a process of "restoration" was quite extensively employed to bring the old engine to its present condition. It said:

"When the Institution of Mechanical Engineers met in Newcastle, in 1855, the members paid a visit to Messrs. Stephenson's works, and, on inquiry being made for the 'Rocket,' it was stated that so many parts were wanting that to make a complete engine of it a large portion of it would have to be made anew. The boiler, or a portion of it, together with some of the gearing, was stowed away in one

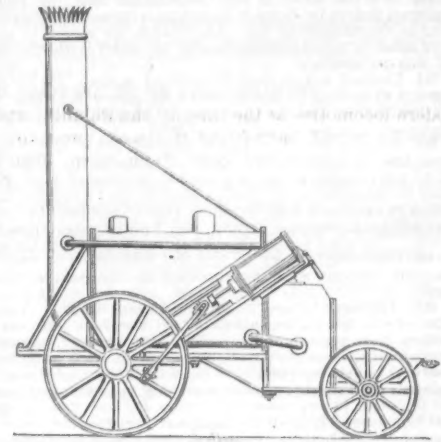


Fig. 1.  
Locomotive Rocket from Wood's Treatise.

of the yards, but if our information be correct, there was nothing like a perfect machine. \* \* \* A very cursory examination of the engine itself shows that the 'Rocket' illustrated in the present number is a very different machine from the 'Rocket' which ran in 1829."

For this reason we have given a copy of the old engraving and of the illustration of the rejuvenated engine as it is to-day. A comparison of the two will be interesting. The contrast, though, between this, the first really successful locomotive, or rather, the one which first publicly demonstrated its success, with our modern engines will be still more so. The original "Rocket" is described by Wood as follows:

"The boiler is cylindrical with flat ends, 6 ft. long and 3 ft. 4 in. diameter. To one end of the boiler is attached a square box or furnace 3 ft. long by 2 ft. broad, and about 3 ft. deep; at the bottom of this box the fire-bars are placed,

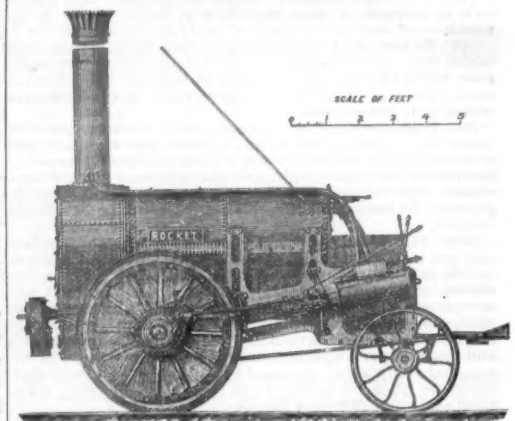


Fig. 2.  
Locomotive Rocket as now Preserved in South Kensington Museum.

and it is entirely surrounded by a casing, except at the bottom and on the side next the boiler, leaving a space of about 3 in. between this casing and the furnace, which space is kept constantly filled with water; a pipe on the under side, communicating with the boiler, supplies it with water, and another pipe at the top allows the steam to pass off into the boiler. The upper half of the boiler is used as a reservoir for steam, the lower half being kept filled with water. Through the latter part of the boiler copper tubes reach from one end of the boiler to the other, being open to the fire-box at one end and to the chimney at the other. In the boiler of the Rocket there were twenty-five tubes 3 in. in diameter. The cylinders were placed one on each side of the boiler, and worked one pair of wheels only. They were 8 in. in diameter, with a stroke of 16½ in.; diameter of large wheels, 4 ft. 8½ in."

The "Rocket" weighed a little over 10,000 lbs., whereas to-day we have Consolidation engines weighing very nearly or quite 100,000 lbs., with cylinders 20×24 in. The cubical capacity of one the cylinders of the "Rocket" was 829 cubic inches; that of the Consolidation engine, 7,538 cubic inches. The total length of the "Rocket" was about 15 feet, whereas the Consolidation engines are about 33½ ft. long. The "Rocket" drew 17 tons on a level; a Consolidation engine would easily draw 1,700.

Notwithstanding all this amazing increase in the size of locomotives, it must be admitted that there is no very essential difference between the principles of



those of to-day, and those which existed in the "Rocket" fifty years ago. The latter had the multitubular boiler, the fire-box surrounded with water, and even a flat top stayed with screw stay-bolts, a plan which seems again to be coming into favor. The blast-pipe was used in the "Rocket" very much as it is used to-day. The D slide valve was employed then as now. The only essential points of difference are in the valve-gear and the means of feeding the boiler, the link-motion and injectors being later inventions. All the other improvements are almost entirely the result of better proportions and workmanship. It is true, as some writer has said, that proportion is often of the most radical importance, and there can be no doubt but that the use of modern and improved tools has made a degree of perfection in workmanship possible now which would have been impossible half a century ago. If we were to conceive of an engineer with a complete set of drawings of a modern locomotive at the time of the Rainhill experiments, he would have found it almost impossible to have had a locomotive built from them. The improvements which have been made since then have been the result of a gradual process of evolution. The naturalists—or some of them—tell us that the present living organisms are the result of millions of trials, failures and struggles carried on through countless years. By a similar process the locomotive has been improved step by step. Probably the influence of what is ordinarily called *invention* on the development of the railroad system is much exaggerated. Its present perfection is due perhaps quite as much to the slow process of *improvement* and evolution as to ideas which have originated in the brains of ingenious inventors. The distinction though between "*invention*" and "*improvement*," and the point at which the one begins and the other ends, is often not very plain. Webster defines *invention* as "the action or operation of finding out something new; the contrivance of that which did not before exist," and *improvement* as "a making better or more valuable"; or "advance or progress from any state to a better." The development of railroad mechanism has been almost universally "a making better" and not "the contrivance of that which did not before exist." It is true that there have been some brilliant inventions in connection with the early history of railroads, but if we enumerate the multitubular boiler, the blast-pipe, the link-motion, the injector, lateral-motion trucks, atmospheric and vacuum brakes, we have included about all the discoveries which have been at all radical in their nature and effects. The electric telegraph and the improved processes of manufacturing steel have, it is true, increased the efficiency of railroads, but it would be possible, we believe, to build a railroad now which would fulfill all the practical requirements demanded of such lines to-day, and, with the exception of the telegraph, not use a single invention patented since Stephenson's time. This assertion is made without an exhaustive examination of the subject, and a thorough investigation might lead to some qualifications; but with the light of nearly a quarter of a century of experience and study of railroads and their construction, the statement is apparently true. If we take a locomotive of to-day, as already stated, it does not differ essentially in principle from the "Rocket" which Stephenson built in 1829. That engine had not the link-motion, and in external appearance and efficiency it differed as much from a modern engine as an ape does from, say, a champion of a walking match; but the features of the two—we mean the locomotives—were very much the same. A gradual process of differentiation has been going on for fifty years, and it is within the recollection of men now in middle life, that about every third railroad journey twenty-five years ago resulted in delay, and failure in "making connections" was regarded then as inseparable from travel by rail. Broken spring-hangers, slipped eccentrics or collapsed flues were such common occurrences then that they were regarded as incurable. At present, delay on a first-class railroad from any defect in the locomotive is comparatively rare, and business men make appointments a hundred or a thousand miles away, feeling as certain of being able to keep them as they would if the journey were merely a ride of a few miles across country.

To what, then, if not to invention, is this remarkable improvement in locomotives due? We say unhesitatingly it is the exercise of mechanical skill in designing not only the general plan of the engines, but of all the details, and the means of carrying out the design and doing the work. Of course, mere manual skill in doing the work is of much importance, but with the use of improved machinery this becomes of less importance daily. By mechanical skill is not meant mere manual dexterity in doing such work, nor

what is generally called ingenuity. A person may have both and still be without the kind of skill meant. There is in fact no English word or phrase which expresses this capacity in its fullness. Perhaps if a word was borrowed from the German, and it was called mechanical "*Geist*," it would represent what is meant. It is a combination of skill and ingenuity, an exalted condition of common sense when applied to mechanical subjects and objects, a delicate discrimination and unerring capacity of reasoning clearly about physical laws, and with it all an extended experience made fruitful by the most careful observation. It is the exercise of this kind of knowledge, ability, or whatever it is called, which has made the locomotive of to-day what the "Rocket" fifty years ago was not.

#### THE JUSTIFICATION OF RAILROAD CO-OPERATION.

A correspondent in an article published elsewhere essays to set forth the reasons why railroad companies are justified in making agreements with each other—that is, avoiding competition—concerning their business, and why the public should not complain of such action. While agreeing mainly with the conclusions of our correspondent, as all our readers know, we cannot say that we are satisfied with his reasoning. He urges that to obtain adequate payment for service performed is a praiseworthy object; and that prosperous railroads are liberal purchasers of labor and supplies at liberal prices, and so make other industries prosperous. We are not willing to permit this reasoning to pass as a sufficient justification of the policy which we advocate. It has been used in all ages to justify all sorts of economic sins, among which we do not count rational railroad combinations, such as we now have concerning freight between the West and the sea-board. The fundamental error in the latter argument is in the assumption that the additional profit which the railroads make from good rates, and which is then expended in the community, is a *creation of wealth*—a pure addition to the property of the community. This is not in any degree true. The railroads and their stock and bondholders do not pay anything to the community which they did not receive first from the community, and—which is the important thing to bear in mind—if they did not get it and spend it, some one else would. If the railroad gets \$72 a car-load for carrying wheat from Chicago to New York, instead of \$36, which is all it used to get, it will have \$36 more to spend, or for its security-holders to spend, no doubt; but then the Western farmer or the New York or European consumer—the customers of the railroad—will have so much less to spend; and so far as encouraging production is concerned, it is all one.

The railroad companies make their combinations without hesitation (or, rather, often, *with* hesitation), because they know by long experience that it is generally impossible for them to make a reasonable profit on that business concerning which they agree to co-operate, if they compete with each other for it; and that it is frequently impossible for them to make anything on it.

Now, why is it that railroad business is such an exception to ordinary business that its prices cannot be established and governed by the free competition of the carriers? Is it such an exception? If it is not, we must not expect the community to accept with equanimity the efforts of the railroads to substitute co-operation and combination for competition. All economical history has shown that in the great majority of industries—in nearly all, in fact—competition is the safest regulator of prices, and that it is the one great and sufficient protection of the interests of consumers and regulator of industry. Many suffer from it, it is true, but their sufferings are like the warning pain that teaches the child to keep his hand out of the fire. If too much capital and labor are devoted to one industry, there is overproduction and unprofitable prices, followed by a withdrawal of capital and industry until an equilibrium is established between supply and demand, which permits average returns on the capital and average wages for the labor.

Now, just here is the fundamental difference between railroad transportation and ordinary industries. In the latter, the provision made for production—that which requires the expenditure of capital—can be proportioned very closely to the demand. In railroad transportation, by the very nature of the instrument employed, it cannot be, but the capacity for production must vastly exceed the demand. If there are manufactories with a capacity for making one-half more cloth than the community will purchase at prices which will yield the average rate of profit on the capital invested, the tendency always is to reduce prices until barely the cost of production is covered, without any interest on the capital, until some of the manu-

factories are abandoned. And this is the chief and best check to the excessive investment of capital in any industry. This fact, that where there is a large excess of producing capacity in an industry the tendency is to prices which yield, not profits below the average, but no profits at all, we wish to emphasize. Where it is not manifest it is usually because of something equivalent to a combination among the producers, or the great advantage in economy which some have over others. If A, B and C have flour mills producing at equal cost, and there is business enough for but one of them, it is easy to see that each will continue to manufacture, however prices may fall, so long as he makes *any* profit on his capital. He expected to make 10 per cent. on his investment, but having once made the investment he will accept 5, 2, 1, or a fraction of one per cent., rather than stop and make nothing.

Now, nearly every railroad has a capacity for many times the traffic which exists for it. The only exceptions that we know of are the elevated railroads of New York and the underground railroads of London. There must be the road for one train a day or one train a week; there must be very little more expenditure on the road for twenty trains a day; and a single double-track road in New York city serves for the passage of about *one thousand* trains a day! Even in the populous state of New York, through which passes a large part of the traffic of the nation, there was in 1878 an average of but 9¼ trains each way daily over the railroads. What a tremendous difference here between capacity and the performance required by the demand for transportation! Every road, even the busiest, has unemployed capabilities. It may have all its rolling stock employed, and need more sidings, second track, etc., to accommodate additions to its traffic. But nevertheless it has an enormous unused capacity, and always will have until its lines are full of trains running as closely together as safety will permit.

Now, when railroads with this vast excess of productive capacity over the requirements of traffic compete freely with each other, the natural result is just what is seen in other industries in which there is a vast excess of capacity over the demand—that is, such a reduction of rates on the business competed for as to leave the least possible margin over the actual cost of doing the work, or the annihilation of profit altogether. This is the *natural* effect of competition under the circumstances. Through freight, or rather competitive freight, will ordinarily pay no part, or but a very small part, of the interest on the capital invested in railroads. Yet this very thing is the chief staple of the complaints made now in New York by the public before the Assembly Investigating Committee. The railroad companies try to remedy it, because they wish to make a profit on all their business, like every one else; the local shippers complain of it because not only does it compel them to pay an undue proportion of the interest on the cost of the railroads, but it frequently endangers their business interests by giving through shippers an advantage in rates.

Here, it seems to us, we find the justification for substituting co-operation for competition in the business of railroad transportation, and a justification which commends that policy to the public as well as to railroad proprietors. If railroads were like vessels, whose capacity can be closely proportioned to the requirements of traffic, there could be no regulator of them like competition. But as in their nature they cannot be so proportioned, neither can they be so regulated. By co-operation the railroads may be able to get an adequate profit on what is now competitive traffic (but usually very much less than their *average* profit). On this traffic, or on nearly all of it, the community is sufficiently defended against extortion by the competition of water routes and of different markets; for co-operation will not prevent this competition. Against extortion, however, the community will be sure to defend itself in any event.

#### NATIONAL RAILROAD LEGISLATION.

Railroad men of the first position and influence are raising for candid discussion the question whether necessary laws for regulation of the business should not be sought from Congress rather than from state legislatures. This does not imply that frequent or extensive laws are needed. These gentlemen have as much occasion as any in the land to deplore the evils of excessive legislation, and to know the pernicious effects of resorting, every year, to legislative bodies, with crude projects of statutes to govern business questions which ought to be determined by the experience, sound judgment and harmonious action of managers of the lines. Upon some subjects, however, laws are necessary. The property of the companies must be protected, and their rights and obligations enforced by the law, either of the state or



of the nation. Should this necessary legislation, these fewest laws that are needed, come from Congress or from the states? this is the question. Its constitutional and legal aspects are of interest, as well as its practical bearings. In favor of adhering to state regulation are the traditions and habits of the past, the very general preference of the people for state government over all matters to which it is adequate, and the very important consideration that local or way traffic business within the limits of one state is naturally and probably of necessity confided to that state. Congress has power to regulate commerce among the states. The regulation of contracts for transportation between two points within the same state cannot, according to the past course of decision, be assumed by Congress.

In favor of some extension of a policy of national care for the conduct and interests of railroad traffic among different states are many considerations growing out of the steady extension of railroad connections, and increase in the number of states through which any given act of through transportation may have to be performed.

What turns the attention of the railroad managers to the subject at this time, however, is probably the disposition shown in some quarters to regulate, indirectly, through rates by state legislation. They know that if New York should require the rates on local freight to be so limited as to yield no higher profit per ton per mile than the rates on through freight, roads wholly within the State of New York might have their entire through traffic diverted from them to roads wholly or partly in other states, which still had freedom to adjust their rates to circumstances. A law which should operate equally on all lines, if beneficial to none, would still be preferable to one which would affect only one out of several competitors.

To rely upon a convenient harmony or unity of purpose among the thirty-eight states is becoming impracticable. This embarrassment is well depicted in a recent Supreme Court decision. The case, to be sure, was a steamboat case; but the principle applies with even more force to railroad legislation, since railroad connections notoriously involve more states than steamboat lines embrace. The Legislature of Louisiana enacted, some ten years ago, a law forbidding carriers of passengers to make any discrimination on account of color, and charging any steamboat owner with damages who should exclude colored passengers from a cabin upon pretext that it was set apart for whites. The steamer Governor Allen, plying between New Orleans and Vicksburg, did, however, arrange two cabins (equally good) for the two races. A colored woman passenger, excluded from the whites' cabin, notwithstanding her demand for a place in it, sued, under the state law, and her complaint went up to the Supreme Court upon the naked question whether the law was valid, or was not void for infringing the power of Congress to regulate commerce. The court annulled the law, and said that if the public good requires such legislation it must come from Congress and not from the states. For, how can commerce among the states flourish if each state is at liberty to prescribe its own rules for through carriers while they are within its jurisdiction? On one side of a river a vessel would have to observe one set of rules, on the other side another set. Each state would act regardless of the interests of the others. If Louisiana may forbid passengers to be assorted in two cabins, then Mississippi may enact that they shall be so assorted; and under these opposing laws, a steamer must stop at the boundary and shift her passengers from one arrangement to the other, or else be exposed to penalty and forfeiture, in one state or the other, at every trip. Even more serious embarrassments and difficulties may arise from endeavoring to adhere permanently to a policy of state legislation over railroads.

As soon as state laws become numerous and extended, the conflict of their differing provisions will become inconvenient. Take a subject on which all persons will agree that some efficient law is needed—the protection of tracks and trains against mob violence such as disturbed the traffic so much in one memorable summer. A train which leaves the Atlantic coast for the far West must run through a dozen states, but why should it come, at each boundary line, under a new system of law for protecting it from attack? Take the question on which the administration of the law in the various states differs so much, and so inconveniently, whether a railroad may limit its carrier's liability by a simple notice to a sender of goods, or must obtain his explicit assent to a contract. Why should the risk of loss shift from one party to the other along the route, according as the train is in one state or another? National rules for these questions would be simpler, more easily under-

stood, better obeyed and more promptly administered, than state codes can be.

There is no doubt that the constitution allows a discreet and moderate regulation of through traffic by Congress. A series of decisions have established a broad view of the commercial power. It is not limited to the forms and modes of commerce in use when the constitution was framed. It was extended to steamboats, promptly, after they were introduced; and lately has been explicitly recognized as to telegraphs; and the Supreme Court then said that it enlarged with the progress of the country, extending "from the horse and his rider to the stage coach, from the sailing vessel to the steamboat, from the coach and the steamboat to the railroad," and so onward, as new instrumentalities of communication are devised. It includes passenger travel as well as transportation of goods, with this additional reason for the former, that independent of the commercial power, Congress has authority to keep the approach to the national capital free. As "all roads lead to Rome," so American railroads lead, many of them, to Washington. And the power to maintain post-roads, taken in connection with the practice of contracting with the companies for transmission of the mails, and of declaring the roads and bridges post-roads, may be an important auxiliary power, for some aspects of this question. So long as Congress refrains from acting the states may probably legislate; but any definite national laws will supersede and annul all state legislation on the same subject matter. A movement in this direction is, therefore, unquestionably an effort for fewer laws and simpler ones; and not toward increase. It substitutes one law for thirty-eight.

#### Grain Receipts and Exports for Nine Months.

Receipts of grain of all kinds at the seven Atlantic ports for the nine months from Jan. 1 to Sept. 27 have been, in bushels, for four years:

	1879.	1878.	1877.	1876.
New York.....	90,570,950	88,440,007	45,839,900	48,897,000
Boston.....	15,230,835	14,234,105	9,604,303	9,377,292
Portland.....	1,061,070	1,540,832	851,943	1,799,742
Montreal.....	10,409,193	10,002,073	8,174,067	9,925,222
Philadelphia.....	35,528,325	29,017,510	13,786,770	23,770,900
Baltimore.....	42,888,380	30,497,300	30,506,784	21,808,924
New Orleans.....	8,794,758	8,618,011	5,044,157	4,565,104
Total.....	204,558,529	182,251,098	104,561,014	120,174,790

The percentages of the grain received at the different places in the several years have been:

	1879.	1878.	1877.	1876.
New York.....	44.3	48.5	43.8	40.7
Boston.....	7.4	7.8	9.2	7.8
Portland.....	0.5	0.8	0.8	1.5
Montreal.....	5.1	5.5	7.8	8.3
Philadelphia.....	17.4	15.9	13.2	19.8
Baltimore.....	21.0	16.7	19.7	18.2
New Orleans.....	4.3	4.7	5.4	3.7
Total.....	100.0	100.0	100.0	100.0

New York thus has received a larger proportion this year than in 1876 or 1877, but a smaller one than last year. Baltimore's proportion is larger this year than ever before. Comparing New York with Philadelphia and Baltimore taken together we have:

	1879.	1878.	1877.	1876.
New York.....	44.3	48.5	43.8	40.7
Philadelphia and Baltimore.....	38.4	32.6	32.9	38.0
The three cities.....	82.7	81.1	76.7	78.7

Together the two latter have thus received a little larger proportion of the grain than in 1876 even.

Comparing New York and Boston taken together with Philadelphia and Baltimore together, we have:

	1879.	1878.	1877.	1876.
New York and Boston.....	51.7	56.3	53.1	48.5
Philadelphia and Baltimore.....	38.4	32.6	32.9	38.0
The four cities.....	90.1	88.9	86.0	86.5

The aggregate receipts of 1879 were larger by the following numbers of bushels than in the years named:

	1879.	1877.	1876.
22,207,431	90,997,515	84,383,733	

New York received about 10 per cent., Boston, 4½ per cent.; Philadelphia, 22½ per cent., and Baltimore 56 per cent. of the excess over 1878; but of the excess over 1876, New York received 49 per cent., Boston 7 per cent., Philadelphia 14 per cent., and Baltimore 25 per cent.

The receipts of New York, Boston, Philadelphia and New Orleans are largely for domestic consumption, but Baltimore and Montreal export most that they receive.

The exports of wheat, flour and corn from the four principal Atlantic ports for the nine months from Jan. 1 to Sept. 27, have been, for the past two years, flour in barrels and grain in bushels:

	1879.	1878.	Inc. or Dec.	P. c.
New York.....	3,008,836	1,880,291	Inc. 1,128,545	59.3
Baltimore.....	317,989	417,844	Dec. 100,175	24.0
Philadelphia.....	117,527	130,141	Dec. 12,614	9.7
Boston.....	537,760	259,863	Inc. 277,903	10.7
Total flour.....	3,981,798	2,687,139	Inc. 1,294,659	47.6
Wheat:				
New York.....	45,980,500	39,984,180	Inc. 6,000,320	15.0
Baltimore.....	22,079,953	12,846,848	Inc. 9,233,105	71.9
Philadelphia.....	14,323,511	5,815,076	Inc. 8,508,435	146.4
Boston.....	3,101,236	2,605,170	Inc. 496,066	19.0
Total wheat.....	85,484,200	61,251,374	Inc. 24,232,826	39.6

	1879.	1878.	Inc. or Dec.	P. c.
Corn:				
New York.....	27,022,488	22,395,200	Inc. 4,627,288	20.1
Baltimore.....	17,747,112	15,564,212	Inc. 2,182,900	14.0
Philadelphia.....	12,348,990	17,317,721	Dec. 4,968,731	38.7
Boston.....	5,936,306	5,394,588	Inc. 541,718	10.0
Total corn.....	63,054,896	60,671,721	Inc. 2,383,175	3.9
Total grain and flour:				
New York.....	88,056,168	71,825,835	Inc. 16,230,333	22.6
Baltimore.....	41,415,410	30,500,280	Inc. 10,915,130	35.8
Philadelphia.....	27,290,136	23,783,502	Inc. 3,476,634	14.6
Boston.....	11,726,372	9,299,073	Inc. 2,427,299	26.1
Total.....	168,458,086	135,408,690	Inc. 33,049,396	24.4

What is most noticeable in this is the great gain of Baltimore in wheat at the same time with a great loss in flour, and the great gain of New York in flour and corn. Up to 1878 Baltimore made insignificant exports of wheat, but was making great inroads into New York's corn-exporting business. But in the two past years, when there have been extraordinary crops of winter wheat in the Ohio valley, much of which is on lines controlled by the Baltimore & Ohio, and much of the rest on the lines of the Pennsylvania, which also gives a very short connection to Baltimore, the latter city has developed an enormous wheat-exporting business. Meanwhile, however, New York seems to have been taking the corn-exporting business. Philadelphia's increase in wheat exports has been much larger in proportion than Baltimore's, and almost as large in amount, but it has had at the same time a large falling-off in corn exports. Taking all together, New York's gain in *quantity* exported is nearly equal to that of the three other ports taken together, but it is a smaller *percentage* than either Baltimore's or Boston's. Thus, of the total exports of the four ports, the percentage from each port in the two years has been:

	New York.	Balti- more.	Philadel- phia.	Boston.
1878.....	53.0	22.5	17.6	6.9
1879.....	52.3	24.6	16.2	6.9

The changes, it is seen, are not considerable in these percentages of total exports, notwithstanding the great changes in the movement of certain staples at certain ports, the gains in one grain being generally largely overcome by losses in another. Baltimore has improved its position most, and two-thirds of its gain has come from Philadelphia and the other third from New York.

The entire export business has been large without precedent in these two years, especially in wheat, and it is the export business alone which can be diverted to any considerable extent from one port to another. Boston has no considerable export business except in flour, but its flour business it holds very well. Its exports are largely, we believe, to the West Indies and other countries aside from Europe, with which it has had a large shipping trade longer than any other American city. But New York's position as a flour exporter seems to be remarkably firm. While Baltimore and Philadelphia gained an immense wheat business, they have lost flour exports. New York exported this year only 54 per cent. of the wheat against 65 per cent. last year, but at the same time it exported 75½ per cent. of the flour, against 70 per cent. last year.

The spring wheat is much less likely to go to Baltimore than the winter wheat. It comes chiefly from territory closely connected with the lakes and the more northern railroads. Now the winter wheat crop this year is perhaps as large as last year's, but the spring-wheat crop, at least the spring-wheat crop north of Kansas, is very much larger. The winter wheat, however, is the first to move, and throughout August, and even half of July, it was swelling the receipts of Baltimore, while the spring wheat of 1879 hardly began to move until the month of September, as may be known by examining the receipts of Milwaukee, which in July and August were trifling, for Milwaukee may be said to receive spring wheat only. Thus later in the season, and especially next spring after the opening of navigation, when spring wheat will be a much larger proportion of the total wheat receipts, it may be expected that a larger proportion will go to New York.

It is a mistake to suppose that all parts of the grain-growing country are equally accessible to any one Atlantic city. Even from those parts west of Pennsylvania from which the railroad rates are made the same or with the same differences, the connections are sometimes very different. The shipments from the country on the lines of the Michigan Central and the Lake Shore are very much less likely to go to Baltimore than those from the lines of the Pittsburgh, Cincinnati & St. Louis, the Central Ohio, the Marietta & Cincinnati and the Ohio & Mississippi. A very small proportion of the shipments from Chicago and Milwaukee go to Baltimore, and by far the larger part of the spring wheat is marketed at or by way of these places. So there are times when the Ohio valley has a great deal of corn to spare, and the country further north but comparatively little, and the reverse of this may be the case. It is not natural that the proportions brought to the different Atlantic ports for export



should be the same under these different circumstances. Each trunk line competes to greater advantage in certain districts than in others, and generally the southern lines have the better command of the southern districts, while the lake and canal route is comparatively ineffective in drawing traffic from the south while through rail rates are low.

The statement of receipts is for seven ports, for all grains, but excluding flour, while the statement of exports is only for four points, and includes only flour, wheat and corn. But not much other grain is exported, so by eliminating flour from the exports we can ascertain pretty nearly what proportion of the grain receipts of each of the four leading points was exported, as follows:

	Bushels received, 1879.	Bushels exported, 1879.	P. c. of receipts, 1879.
New York	90,570,950	68,440,687	75.5
Baltimore	42,588,380	30,497,300	71.6
Philadelphia	35,528,325	29,017,510	81.7
Boston	15,236,835	14,234,105	93.5

The quantities not exported were:

	1879.	1878.
New York	17,567,071	26,000,287
Baltimore	3,061,315	2,086,240
Philadelphia	8,555,824	5,884,713
Boston	6,190,293	6,234,347

The quantity received at New York for domestic consumption thus appears to have been nearly as great this year as that at the other three markets, and last year to have been nearly twice as great.

#### Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

*Southern Minnesota*.—Extended from Jackson, Minn., westward to Fulda, 37 miles.

*Chicago, Burlington & Quincy*.—The track of the *Brownville & Nodaway Valley Branch* has been extended from Clarinda, Ia., south to Braddyville, 11 miles.

*Utah Southern Extension*.—Track laid to a point forty miles south by west from Juab, Utah, an extension of 15 miles.

*Chicago & Western Indiana*.—Track laid from Dalton, Ill., northward 10 miles.

*Atchison, Topeka & Santa Fe*.—Track is laid on the *Conley, Sumner & Ft. Smith Branch* from El Paso, Kan., south by east to Winfield, 25 miles.

*Louisiana Western*.—Extended from English Bayou, La., eastward 7 miles.

*Western North Carolina*.—Extended from Swannanoa Tunnel, N. C., westward to Hemphill's, 9 miles.

This is a total of 114 miles of new railroad, making 2,328 miles thus far this year, against 1,320 miles reported for the corresponding period in 1878, 1,505 in 1877, 1,719 in 1876, 861 in 1875, 1,125 in 1874, 2,867 in 1873 and 5,066 in 1872.

THE ERIE PRESIDENCY, according to Wall street rumors (which are usually manufactured to serve speculative ends, but do occasionally have a basis of fact), is to be given at the approaching election to Mr. Cornelius Vanderbilt, the First Vice-President of the New York Central, by a friendly arrangement which includes making Mr. Jewett, the present President, President of the Western Union Telegraph Company, which is largely controlled by the Vanderbilt interest. According to Wall street, there has been a great purchase of Erie securities recently, both by the Vanderbilt and the Gould interests, and it was assumed that these purchases were made for the purpose of controlling the approaching election. We very much doubt whether any purchases have been made by anybody for this purpose. Half the shares being voted by the London voting trustees, whoever should attempt to get control without their support would have to command what at present prices would cost something like \$50,000,000, and whoever has their support will hardly need to buy at all. But the reports were likely to strengthen the market, and they served their end when this was effected, whether they had any basis or not. There is nothing inherently improbable in the reports, however. There is a tremendous speculation in Erie securities, bonds as well as shares, and as no dividends can be expected for some time at least, the holders are eager to take any steps that will increase the market prices of their securities. It might be supposed that to give the control of the road to one of the chief officers and owners of the principal competing road would lessen rather than increase confidence in the future of the property; but it is probably true that prices would advance if the Erie was made a "Vanderbilt road." Investors seem to assume that if Mr. Cornelius Vanderbilt should take the road, he would do the best he could for it, and treat it fairly in all its relations with the New York Central; that is, that he would not take the road unless he could so manage it. They probably also remember that the Michigan Central was the chief competitor of the Lake Shore, and that it did not suffer when Mr. Wm. H. Vanderbilt, long the President of the Lake Shore, became President of the Michigan Central also; and perhaps some of them have an inkling of the fact that the avoidance of conflicts by such a unity or harmony in the managements of the two companies would of itself be a great advantage.

But it must be remembered that there is, so far, nothing but rumor as a basis for the report, and we speculate rather to show why the rumor should have the effect which it seems to have had on the stock market than to show that it is probable or anything more than possible. Statements made Wednesday by Mr. Norvin Green, and the telegram from

Sir Edward Watkin received the same day, seem to contradict the rumor flatly.

THE ADVANCE IN EAST-BOUND RATES announced to take effect next Monday seemed justified by the material advance in lake and canal rates, which had attained very nearly the equivalent of the 30-cent rate that has been in force for some weeks past. The railroads have had a very large traffic, and the tendency was to offer them more than they could handle promptly. Part of this activity, however, may have been due to the fluctuations in the grain market, causing shippers to hurry through grain to take advantage of what was supposed to be a temporary advance. But since the advance was announced on Thursday of last week (ten days' notice is given of advances) canal rates have fallen off largely (from 9 to 7 cents a bushel for wheat), and lake rates are also lower rather than higher. The effect of the announcement ordinarily is to stiffen water rates, as the advance itself makes it possible for the boats to get better rates, and it is possible that this change indicates that the demand for transportation is not quite so brisk as it has been, and that the 35-cent rate will reduce shipments. The course of prices has a good deal to do with it, and these have fluctuated considerably recently. Under any circumstances it seems certain that there must be a heavy grain movement through the winter, and the European demand is likely to be so pressing that a difference of 5 cents per 100 lbs. will make very little difference in the demand; and if the railroads do not get the advance, the ocean vessels will. They are already getting high rates, and 180 per cent. more than they got last June.

Still it is by no means certain that the winter rates prevailing before 1876 can be had. Formerly 40 cents was a very low winter rate, but it has not been secured for any considerable quantities of grain for some years. Perhaps it can be had next winter, but we doubt it, and should say that it would be easier to get 50 cents for provisions than 40 for grain, though of late years the difference has been made only 5 cents.

THE SOUTHWESTERN ASSOCIATION was not renewed any too soon, judging by the reports of earnings and expenses given by the several roads which form it. We noted last week that all the members then reporting show a decrease in earnings per mile in August, compared with last year, amounting to as much as 39 per cent. on one road, and we might have added that their earnings per mile in August this year were smaller also than in 1877. But even this report seems to have been unduly favorable. The report of earnings and expenses of the Chicago, Burlington & Quincy for August published this week, makes the gross earnings this year only \$1,315,558, instead of \$1,575,150, as reported earlier, and given in our table last week, showing a reduction in gross earnings per mile of road since last year from \$989 to \$790, or 23 per cent., and though there was a considerable reduction in working expenses, the total net earnings were reduced more than 25 per cent.—the reduction in this one month being about  $\frac{1}{4}$  of 1 per cent. on the stock. Now we have the Hannibal & St. Joseph report for September, showing a reduction of 23 $\frac{1}{2}$  per cent. in gross earnings compared with 1878, though the Association was renewed and rates restored about the middle of the month, though doubtless a considerable portion of the work done afterward was at the old rates. Even in the last week of September the Hannibal & St. Joseph's gross earnings were about 17 per cent. less than in the corresponding week of last year, though by that week the traffic should nearly all have paid full rates. This indicates that what we suggested last week is true, namely, that the Kansas traffic is much lighter this year than last, owing to smaller crops of wheat. We can hardly judge of this by the returns of the Chicago, Burlington & Quincy, whose Kansas traffic is but a small part of the whole, though most of its other traffic, so far as we can judge, ought to be better rather than worse than last year; but the through traffic of the Hannibal & St. Joseph is nearly all Kansas traffic, and a very considerable part of its total traffic. It, however, has lost its position as a feeder of the Wabash, which it had last year, that road making its connection with Kansas City by another line this year, and it thus may have suffered more than the other lines from "Missouri River points."

The correction in the Chicago, Burlington & Quincy August report involves a correction also in its returns for the eight months, which show a decrease of \$176,804, or 2 per cent., in gross earnings, instead of an increase of \$82,796, or 0.9 per cent.

The roads having carried at a loss when traffic was heavy, the restoration of rates may not result in any improvement in earnings, because traffic is necessarily light. We do not understand, however, that there has been any great misfortune to any Kansas crop except wheat, and later in the season, when the corn, hogs and packing-house products are moving more freely, there may be a traffic more like last year's.

SPECULATORS IN ERIE SECURITIES seem to have but just discovered that the bonds of the reorganized company carry votes. This we announced shortly after the foreclosure. The "voting trustees" vote on half of the stock until 6 per cent. dividends shall have been paid on the preferred stock for three consecutive years, and as they were appointed particularly to represent the bondholders, this was expected to give the latter substantial control of the road until it shall have been demonstrated that the stock has a substantial interest in the road—in short, to prevent a repetition of the experience of its earlier history, when the vast property

was managed by the votes of people who had a very remote contingent interest in it, many of whom would give proxies for a trifling remuneration because they hardly hoped even to get any other income from their shares.

This arrangement does not positively insure permanency of control to the voting trustees; they will vote for about \$43,000,000, while one-half of the stock and bonds is about \$75,000,000. If the bonds had remained in England, it is supposed that they would have been largely voted by voting trustees, as these are the persons whom the bondholders originally chose to represent them. But most of the bonds are said to have been sold in this country, and the Americans are not so sure to support Sir Edward Watkin's committee. It will not be easy, however, to get anything like the whole of the stock and bonds to vote at any election, and we presume that it is probable that the half of the stock for which the trustees vote will always be a majority of the shares and bonds voted. If not, however, their wishes can only be defeated by the votes of a considerable number of the bondholders; the stockholders cannot by themselves outvote the trustees. So the control will remain where it was intended, in the bondholders, unless the trustees should join with the stockholders against the bondholders.

WATER RATES changed very little during the week ending Oct. 1, but there were some fluctuations in the following week, at the beginning of which the announcement was that rail rates would be advanced from 30 to 35 cents per 100 lbs. on grain from Chicago to New York Oct. 13. The effect of such an announcement is usually to stimulate shipments and so strengthen lake and canal rates. But lake rates at first went down a little, and Saturday were quoted at 6 cents per bushel for corn and 6 $\frac{1}{2}$  to 6 $\frac{3}{4}$  for wheat from Chicago to Buffalo; but they have recovered since and have been quoted since Sunday at 6 $\frac{1}{2}$  for corn and 7 for wheat until Wednesday, when an advance of  $\frac{1}{4}$  cent was made.

Canal rates, which had been as high as 9 $\frac{1}{4}$  and 9 $\frac{3}{4}$  cents a bushel for wheat from Buffalo to New York, and most of last week were as much as 9 cents, dropped Monday to 7 cents for wheat and 6 $\frac{1}{2}$  for corn, and so remained until Wednesday, when  $\frac{1}{4}$  cent. more was obtained. This reduction from 17 $\frac{1}{2}$  to 15 $\frac{1}{2}$  cents per bushel on the cost from Chicago to New York by water comes just before an advance from 18 to 21 cents in the rail rate.

Ocean rates have advanced materially, and as much as 9 $\frac{1}{4}$ d. per bushel for grain by steam from New York to Liverpool has been paid,  $\frac{1}{2}$ d. per pound for cotton (the rate is usually  $\frac{1}{4}$ d.), 3s. 9d. to 4s. per barrel for flour, 70s. per ton for butter and cheese, and 55s. per ton for provisions. These are the highest prices, and 37s. 6d. for provisions was paid the same day. Wednesday the grain rate went down to 8 $\frac{1}{2}$ d. It is noticeable that charters were taken by steamers for cotton from New Orleans to Liverpool at  $\frac{1}{2}$ d. when the New York rate was  $\frac{1}{2}$ d. The New Orleans rate is usually twice as high as the New York rate.

FOREIGN IMMIGRATION has increased materially this year over last, but it is far below that of the years which followed the Franco-German war. For the nine months ending with September, Mr. Nimmo, the Chief of the Bureau of Statistics, reports 115,404 immigrants at the port of New York this year, which is 38,087, or about 50 per cent., more than last year. The importance of immigration as a factor in the general increase of population and production, is, we think, very generally overestimated. It is very much less important now than it used to be, when the population of the country was smaller. There are now in the United States close upon 50,000,000 of people, and the increase during the next year, aside from immigration, will doubtless be about 1,000,000. In the face of this natural increase, such figures as the above are quite inconsiderable. Immigration, however, is a very good indication of the prosperity of this country compared with European countries. Nearly every neighborhood in Europe west of Russia is now represented in the United States, and our prosperity or adversity is known by the class which emigrates almost as soon as it is here, by the letters of those who have already migrated. If work is not to be had, or the foreigner can do as well at home, he does not come here; but when work is plenty and wages good, he comes with kindred and neighbors and sends back such accounts that others follow them.

THE GREAT WESTERN STOCKHOLDERS, at a recent special meeting, in England, voted to sustain their directors and not to adopt the recommendations of the Grand Trunk, which at one time it seemed quite probable that they would do. We understand that a preliminary agreement with the Canada Southern has been made for a term of years, under which the two companies will have substantially a common interest in all through business, and Col. F. D. Grey, the new President of the Great Western, is on his way to this country to complete the arrangements. The Great Western will get a share of the Wabash business, and will get it by way of the Lake Shore's line between Toledo and Detroit. Whether the Wabash will make exclusive connections with these roads and the Lake Shore, or whether it will also interchange at Detroit with the Grand Trunk on equal terms, we do not hear; if the latter, the Grand Trunk may profit by the arrangement as well as the Great Western, and this cannot be the purpose of the arrangement, whatever may be its effect.

#### The Great Western Directors' Report on Combining with the Grand Trunk.

The following is the special report made by the directors of the Great Western Railway of Canada upon the proposals for a fusion of the net receipts of their road and the Grand Trunk, which they issued to the shareholders.



ers on calling a special meeting of the company to vote on this question. This meeting was held in London Oct. 2, and it is reported by telegraph that the directors' report was then adopted and their policy indorsed by vote of the shareholders:

The board think that present circumstances make it their duty to assemble the shareholders, lay before them a full and plain statement of the board's policy concerning the proposed amalgamation with the Grand Trunk Railway, and ask for an expression of confidence in such policy, in order to strengthen their hands in the conduct of negotiations with the Grand Trunk and other companies. They do this for two reasons, the retirement of their late president, Mr. Childers, and the agitation among the shareholders, which has been set on foot through the public press and otherwise, and which has the effect of embarrassing the directors in the free exercise of their judgment concerning proposals which affect the deepest interests of the company. The board have elected to the presidency of the company its former Vice-President, Lieut.-Col. Francis D. Grey, and after careful reconsideration of the whole question, they see no reason for any material change in the policy pursued under the leadership of Mr. Childers. The present agitation was commenced, after the general meeting in April last (at which the feeling of the shareholders was in favor of the directors' policy), by persons, some of whom at least did not then own any of the company's shares. It has been supported by serious misstatements, which may mislead some of the shareholders, and its continuance does harm to the company, for on the one hand it lessens the influence of the directors in their negotiations with the Grand Trunk board, and on the other it impairs the confidence of the various other railway companies in America in the stability of this company's arrangements. The board trust that the meeting they are now calling will decisively and finally put an end to this state of things, and with that object they proceed to state the position of the question, the policy concerning it, and the reasons of that policy.

#### HISTORY OF THE QUESTION.

The Canadian system of railways belonging to this company, as will be seen by the accompanying map, is an exclusively inland one, comprised within the peninsula of Western Ontario, lying between lakes Ontario, Erie and Huron, the extreme points of the system being Fort Erie (Buffalo), Niagara Falls, Toronto, Southampton, Sarnia, Windsor (Detroit), and Port Stanley. The total length of the company's system, including leased lines, is 806 miles. It has no line of its own to the Atlantic coast, but its geographical position is of the utmost importance, both because of the local traffic in the territory which it covers, and as connecting with the United States railways westward to Chicago, Milwaukee, and the entire system of railways to San Francisco, and eastward to New York, Boston and other Atlantic ports. It is also connected with the Grand Trunk Railway at Toronto. The Great Western Company's system, as originally designed, was of such importance to the United States railways that its construction was materially assisted by subscriptions from the New York Central and Michigan Central companies, and the connection with them secured to it for a considerable period a large and profitable business, and enabled it to pay good dividends. In 1850 the Grand Trunk Company, whose lines had hitherto been only connecting lines, entered into direct competition with this company by an extension through the whole length of this company's territory from Toronto to Sarnia, thus acquiring a direct line from Portland to Sarnia, a distance of about 735 miles, of which about 168 miles are within this company's territory, and 627 miles entirely outside it. The total mileage of the Grand Trunk system is about 1,370 miles. Within the last few years another competitor has presented itself. The Canada Southern Railway has been constructed between Buffalo and Detroit, presenting an alternative connection between the states of New York and Michigan, which is now controlled by the New York Central Company; but between it and this company all competitive traffic is now "pooled." The policy of the Great Western has throughout been peaceful. It has never built a mile of road in the district originally occupied by the Grand Trunk Railway. The projected branch of seven miles to Queenston, the charter for which was acquired many years ago, and which has been repeatedly cited as a proof of rivalry, is merely an improvement of a connection already existing with the Rome, Watertown & Ogdensburg Railway, which does not compete with the Grand Trunk line. The policy of the Grand Trunk, on the other hand, has throughout been aggressive. The construction of the Toronto & Sarnia line was so in the highest degree, as is their extension of it, now under construction, from Sarnia to Chicago. The same tendency has prevailed in their rates for traffic. As an example: the distance between New York and Detroit by the Great Western route is 697 miles; but the Grand Trunk Company has been carrying traffic between those points by a circuitous route of about 1,057 miles, at far lower rates than those charged by the shorter route. This policy, while it has the effect of swelling the gross receipts cannot have added to its net revenue. Repeated efforts have been made by successive boards of this company to work harmoniously with the Grand Trunk Company, either by agreeing upon common rates in the territory which they jointly occupy, or by some other plan limited to the competitive traffic; but the Grand Trunk Company has always been reluctant to treat on any basis which did not saddle upon this company liabilities in respect of the enormous length of Grand Trunk Railway outside of the Great Western system. Many proposals upon this basis have been made to this company by the Grand Trunk Company during the last twenty years. In 1876 an agitation was set on foot in support of a proposal of that kind, and the question was brought before a general meeting on the 12th of October of that year; when, after an exhaustive speech from the company's late President, Mr. Childers, which is reprinted in the appendix to this report, the shareholders rejected it by an overwhelming majority. At that time, as now, the board of this company was in favor of an arrangement for dividing, on fair terms, the gross receipts of the traffic for which the two companies compete. With the object of effecting this, the presidents of the two companies, Mr. Childers and Sir Henry Tyler, met in Canada in 1877. Warned by many previous failures, the Great Western board proposed that an arbitrator should be named to decide those points on which they could not agree. The Grand Trunk board refused this, and consequently the two presidents separated without coming to any agreement for the proposed division of traffic. Again, this year, an effort was made, at meetings in America and Canada of deputations from the two boards, to come to an arrangement for the division of the competitive traffic; but this attempt failed through the return to England of the Grand Trunk directors during the course of the negotiations. When the deputation from this board returned, the negotiation was resumed, and the correspondence passed which is printed in the appendix, the result of which is subsequently referred to. In concluding the narrative part of this report, the directors would add that the numerous financial and other difficulties existing when they took office have for the most part been surmounted; and that the road and equipment are throughout in excellent order,

and carefully and economically managed. The general depression in trade, and the serious reductions in rates caused by the unwise competition of the trunk lines, have prevented, for several years, the earning of dividends, but these causes have injuriously affected all railways alike. The revenue of this company has, in addition, suffered from the construction of the Canada Southern, and the prohibition, by Order in Council, of cattle traffic through the Dominion. Trade, however, is reviving, with the result that already the tonnage now carried by this company exceeds that of former prosperous years, and wiser counsels are prevailing among the competitors for traffic. Satisfactory relations exist with the New York Central and its subordinate lines, the Canada Southern and the Michigan Central, with all of which this company exchanges or divides a very large traffic, and it has lately entered into similar relations with the Wabash Company, whose system embraces a vast area of country from which the Great Western has hitherto been practically excluded. Moreover, the Detroit & Milwaukee Railroad has been acquired and reorganized, and is now being satisfactorily worked in connection with this company. These circumstances can hardly fail materially to improve this company's revenue.

#### PRESENT STATE OF THE QUESTION BETWEEN THE TWO COMPANIES.

The board of this company adhere to the views they have always held as to any arrangement with the Grand Trunk Company, namely, that it should, at all events as a first step, be confined to what is necessary to stop the antagonism between the two companies by an amicable division of all the competitive traffic. The Grand Trunk board, on the other hand, insist on an immediate fusion of the whole net receipts of both companies; that is, in effect, they demand that the entire business of both companies shall be carried on by them in partnership. In Mr. Renton's letter of 25th of August, 1879, it is stated that the Grand Trunk Company "can guarantee to the proprietors of the two companies upward of £200,000 (per annum) as the immediate advantage of a close alliance," and has "no doubt of being able to obtain, in combination with the Great Western Railway, the formal sanction to the agreement of the Dominion Legislature;" but the further correspondence shows that the Grand Trunk directors were not prepared to give practical effect to either of these conditions, for Sir Henry Tyler, in his letter of the 1st of September, 1879, refused to guarantee any minimum to the Great Western Railway, and demanded that the arrangement which he proposed should take effect whether the Legislature of Canada approve it or not, and even declined to ask the Canadian Prime Minister, who was then in London, whether he thought legislative sanction could be obtained. It may be as well that the shareholders should be informed that when, last year, the Grand Trunk applied to the Dominion Parliament for powers to amalgamate with other companies, the following proviso was added in committee, and now forms part of the act: "Provided also that this section shall not give to any of the above-mentioned railway companies other than the Grand Trunk Railway Company of Canada, any more or greater powers in the respect in this section mentioned than they now have, nor shall this section apply to any company whose line runs in the same general direction, and competes with the said Grand Trunk Railway, nor to any company whose line runs between the Detroit & St. Clair and Niagara rivers, or to any railway lines owned or leased by such last-mentioned company."

#### ILLEGALITY OF THE ARRANGEMENT PROPOSED BY THE GRAND TRUNK COMPANY.

Sir Henry Tyler's letter of Sept. 1 brings the board face to face with a legal question of the utmost gravity, which would alone, they think, be absolutely decisive of the question. No such partnership as the Grand Trunk board requires would be binding or legal without the sanction of the Canadian Legislature. Without that sanction the transaction would be altogether *ultra vires* of both companies. In 1875 the boards of both companies were so advised by their respective counsel. The proposal, therefore, in Sir Henry Tyler's letter is simply that the two companies should set the law at defiance, and act without reference to it, and he appears to think that safety in doing this would be insured by "establishing a joint management," and adhering to it under all subsequent conditions. The board would draw the attention of the shareholders to the extreme peril of such a scheme. The proposed agreement would be utterly void, conferring no rights and imposing no obligations on either company. If, under such an agreement, the Grand Trunk Company had to make any payments, it could not be compelled to do so. That company's directors take credit in Mr. Renton's letter of the 25th of August, for having never, in the time of their great est difficulty and depression, shown any disposition "to repudiate burdens, however onerous." They are evidently not fully aware of their predecessors' acts. In 1860 an agreement was made between their company and the Great Western under their corporate seals, for dividing the profits on certain competitive traffic. A considerable sum became due to the Great Western under this agreement; but the then Grand Trunk directors refused to pay it, and successfully evaded their obligation on purely legal grounds. The case was tried in the Court of Queen's Bench of Upper Canada, and one of the pleas of the Grand Trunk was "that the agreement stipulated for a division of the net profits of said companies in the said count mentioned, which is contrary to law." The board do not wish to question the personal good faith of the present directors of the Grand Trunk Company, but it is necessary to contemplate the possibility of change. The danger, however, does not stop here. Boards of railway companies cannot, even when agreed, defy the law with impunity. The courts of law would interfere to restrain them at the instance of the Attorney-General, or even at the instance of any single shareholder of either company. Further, the directors could feel no certainty, even if the arrangement were suffered for a time to work without interruption, that some demand might not be made at a later period against this company or its shareholders for repayment of any money the Grand Trunk Company might have paid under it, or even that the directors of this company might not be made personally responsible for such money, or for any funds of this company, which they might have paid away to the Grand Trunk Company.

It is perfectly obvious that in the face of such dangers the arrangement could not be carried out without legislative sanction, and that if such an attempt were made, and afterwards had to be abandoned, it would inflict a serious and peculiar injury to this company, from which the Grand Trunk would be free; a difference which, perhaps, explains how it is that the directors of that company, who naturally and properly look to its interests alone, regard the dangerous scheme they propose with more equanimity than the board of this company. To enter into the proposed arrangement would be for this company to change into open hostility the friendly relations with those companies with which it now interchanges the bulk of its traffic, and induce them to form active combinations against this company. On the illegal agreement with the Grand Trunk Company failing, as it must fail, that company would be at no greater disadvantage than it is now, but this company could no

longer return to its present position, and would find itself isolated and dependent upon the Grand Trunk Company for all its communications. To such a position the board can never submit, and they call upon the whole body of shareholders to support them in this determination.

#### THE GRAND TRUNK COMPANY'S PROPOSAL CONSIDERED FINANCIALLY.

It is superfluous to discuss in much detail the financial results to be expected from a plan which is legally impossible, but there are some points to which the directors wish to draw the shareholders' attention. An insuperable obstacle to amalgamation exists, while the Grand Trunk Company is engaged in a warfare with those American lines, from which the Great Western derives so large a proportion of its traffic—a warfare which the proposed fusion of net receipts would do nothing whatever to check, but would indeed aggravate. The Great Western shareholders would find themselves involved in a conflict over which they would have no control, the disastrous results of which it is impossible to predict, beyond the certain loss to this company of the bulk of its traffic, as about three-fourths of the whole present through traffic of this company depends on its friendly relations with the United States railways. On the other hand, the benefit to be gained by a reduction of expenses consequent upon a fusion is very problematical, but whatever it might prove to be, it could for the most part be secured by a division of the competitive traffic, as proposed by this board. If the two systems of railways were small, there would no doubt be a considerable gain by fusion, because each system must, while separate, have an independent management; but this argument entirely fails when applied to lines of the magnitude of those in question, the management of which would require nearly as many officials as at present. This will be obvious when it is remembered that the extreme points of the lines are as far from each other as London is from Warsaw. To test the confidence of the Grand Trunk in their expected saving of £200,000 a year as the result of fusion, this board asked if they would be prepared to make part of it available as an indemnity to this company against the risks already referred to, but the Grand Trunk directors were not prepared to convert their rhetorical guarantee into an effective one.

#### CONCLUSION.

It must not be supposed from anything that has been said, that the board are desirous of being on hostile terms with the Grand Trunk Company. On the contrary, they wish to enter into such arrangements as will put an end to competition; but they are not prepared to do this upon terms which it can be foreseen from the beginning must fail, and the failure of which would plunge the company into an unknown depth of difficulties, from which it might never be able to extricate itself. The directors appeal to the shareholders to support them in this temperate and prudent policy, by intrusting them with their proxies, should they be unable to attend in person at the general meeting. Those shareholders who happen to be on the spot and join in the agitation are no doubt entitled to respectful consideration, but they are not the whole company, and the interest of those at a distance is not less to be consulted. The directors, however, would desire to have as many shareholders as possible personally present at the meeting, and trust that all who can will attend. Above all things, the directors trust that there may be no hesitation as to the course to be followed. Whoever may be the directors of this company, it is essential that they possess the confidence and support of the shareholders, otherwise it would be impossible effectually to protect the interests of the proprietors, or to conduct any important negotiations to the advantage of the company.

FRANCIS D. GREY, President.

JAS. BALD,  
THOMAS BARKWORTH,  
THOMAS CHILTON,  
JOHN FELL,  
JOHN W. MACLAURE,  
Directors.

Offices of the Company—120, Gresham House, Old Broad street, London, E. C., Sept. 22, 1879.

#### President Scott on Congressional Railroad Legislation.

Col. Thomas A. Scott, President of the Pennsylvania Railroad Company, has addressed the following letter to the Special Committee of the New York Chamber of Commerce on Railroad Transportation in regard to legislation by Congress for the regulation of inter-state commerce:

PHILADELPHIA, Oct. 3, 1879.

GENTLEMEN: I beg to acknowledge the receipt of your favor of Sept. 18, asking an expression of my views upon the question of the regulation of inter-state commerce by Congress, and inclosing a copy of your letter to the Presidents of the New York Central and New York, Lake Erie & Western railways in which you suggest that a bill having that end in view should be prepared by the executives of the trunk lines. I gather from your letter that what is desired to be accomplished is to prevent unjust discrimination between shippers, and secure to them reasonable, equitable and permanent rates of transportation. The subject to which your communication refers was discussed very briefly toward the close of the last session of Congress; but the tenor of the discussion made it quite clear that no thorough investigation had been made into the matter, and that the bill then pending was not one which, in the language of your letter, "while protecting the public would be just to the railroads." It was then suggested in the Senate that a commission of experts should be appointed by the government for the purpose of examining fully and carefully into this question, ascertaining all its bearings, collecting the data essential to its proper consideration, and framing a bill for presentation to Congress. Since that time the trunk lines, with the view of preventing the differences that have in the past been detrimental alike to the railroads and the public, and of doing equal justice to all shippers, have selected a Board of Arbitration, whose experience and ability they believe to be such as justly to entitle them to the confidence of the public.

I do not believe that the merits of the matter could be better ascertained, or conflicting views better harmonized than by joint consultation between that board and a government commission appointed as hereinbefore suggested. This joint board could confer with the officers of railways and other transportation companies, with the different commercial organizations, and with the representatives of the farming and other interests involved in the question, with the view of taking such action as would be fair and equitable to all parties. While making this suggestion, I beg to say, however, that I shall be glad in the mean time, and as soon as may be consistent with my other engagements, to confer with the presidents of the other trunk lines, as suggested in your letter, and see what can be done to forward the result desired, and which I hope may be satisfactorily attained. I beg to say in conclusion, however, that in order to protect the interests of your own and other leading commercial cities, it seems to me that it would be essential that any legislation had in Congress, to be entirely effective, should have the concurrent action of the legislatures of the several states, which have created the various railway companies and conferred upon them their corporate powers.

THOMAS A. SCOTT, President.



## General Railroad News.

## MEETINGS AND ANNOUNCEMENTS.

## Meetings.

Meetings will be held as follows:

*St. Louis, Kansas City & Northern*, special meeting, in St. Louis, Oct. 14, to vote on consolidation with the Wabash.

*Wabash*, special meeting, in Toledo, O., Oct. 14, to vote on consolidation with the St. Louis, Kansas City & Northern.

## Railroad Conventions.

The *Southern Time Convention* will hold its fall meeting at Barnum's Hotel, Baltimore, Oct. 15.

The sixteenth annual convention of the *Brotherhood of Locomotive Engineers* will be held in Kansas City, beginning Wednesday, Oct. 15. Arrangements have been made at the Coates House for the accommodation of delegates.

## Dividends.

Dividends have been declared as follows:

*Rhode Island & Massachusetts* (leased to New York & New England), 3 per cent., payable Nov. 1.

*Housatonic*, 2 per cent. quarterly on the preferred stock, payable Oct. 15.

*Baltimore & Ohio*, 4 per cent., semi-annual, on Main Stm stock, payable Nov. 1; also 5 per cent., semi-annual, on Washington Branch stock, payable Nov. 1.

## Mail Service Extensions.

Mail service has been ordered over railroad lines as follows:

*Utah Southern*.—Service extended from Santaquin, Utah, to Juab, 34.03 miles, from Oct. 1, less 4 miles to York discontinued, making net increase 30.03 miles.

*Chicago, Milwaukee & St. Paul*.—Service extended over *River Division*, from Winona, Minn., to La Crosse, Wis., 27.45 miles.

*St. Paul & Sioux City*.—Service ordered over *Black Hills Branch*, from Heron Lake, Minn., to Hickock's Prairie, 44.32 miles, from Nov. 1.

## Foreclosure Sales.

The *Lake Huron & Northwestern* road was sold at assignee's sale Oct. 1, and bought by C. H. Prescott for \$17,000. It is said to have cost about \$100,000. The road was built last year and is of 3-foot gauge, running from Tawas City, Mich., on Lake Huron, west by south to Camp Watson on the Au Gres River, 13 miles. It is used to carry lumber and logs, but the intention was to build it through to a junction with the Jackson, Lansing & Saginaw road.

## Order of Railroad Conductors.

The twelfth annual convention met in the hall No. 300 Eighth avenue, New York, Oct. 7. About 60 delegates were present, representing the various divisions of the Order. The convention will remain in session until Friday evening, and will hold two sessions daily. Thus far no business of special public interest has been transacted. The association was organized 12 years ago, at Amboy, Ill., as the Conductors' Brotherhood. At the convention held in Chicago one year ago it was reorganized, and its name was changed to its present form. It is a secret benevolent society, and its general principles are for the advancement of the moral and social improvement of its members, and a better understanding between the employees and managers of the railways. Its cardinal idea is the promotion of temperance and total opposition to strikes of any kind among any of the employees of the railway companies.

Wednesday afternoon the delegates, with their lady friends, visited Governor's Island. Thursday they were to visit the institutions on Blackwell's Island, by invitation of the Department of Charities and Correction. Friday they take a sail around Staten Island and look at Coney Island, and on Saturday they will visit West Point. On Sunday morning they will attend Plymouth Church in a body. On Monday they will visit Philadelphia, and on Tuesday they will visit Mauch Chunk, the Switch-Back and Mount Flagstaff. In the evening there will be a ball and banquet at the Mansion House, Mauch Chunk. On Wednesday morning they will go to Glen Onoko, on the Lehigh & Susquehanna Railroad, and return to New York in the afternoon. On Thursday, Oct. 16, they will go to Greenport, Long Island, enjoy an old-fashioned clam-bake, have a yacht cruise around Peconic Bay and Shelter Island, return to New York in the evening, and then separate. The programme of entertainment is under charge of John B. Mumford, Superintendent of the New Jersey Central Railroad Ferry, who is Chief Grand Conductor of the order, and presiding officer of the convention.

## Cincinnati Passenger Agents' Meeting.

At Cincinnati, Sept. 30, a meeting of passenger agents was held in response to the call issued by Messrs. Cone, Cobb and Ford, dated St. Louis, Sept. 22, 1879 (published last week); the following lines were represented by the gentlemen as enumerated below:

Cincinnati, Sandusky & Cleveland, H. M. Bronson. Missouri, Kansas & Texas, J. D. Brown. Indianapolis, Cincinnati & La Fayette, John Egan. Indiana, Bloomington & Western, John W. Brown. Pittsburgh, Cincinnati & St. Louis, W. L. O'Brien. St. Louis Iron Mt. & Southern, O. W. Ruggles. Atlantic & Great Western, W. B. Shattuc. Cleveland, Columbus, Cincinnati & Indianapolis, A. J. Smith.

La Fayette, Bloomington & Muncie, G. W. Smith. Cincinnati, Hamilton & Dayton, S. Stevenson.

Wabash, H. C. Townsend.

Chicago, Burlington & Quincy, J. R. Wood.

Vandalia Line, E. A. Ford.

Ohio & Mississippi, C. S. Cone, Jr.

St. Louis & San Francisco, D. Wishart.

Toledo, Peoria & Warsaw, B. F. Tichener.

Baltimore & Ohio, T. P. Barry.

The meeting was called to order at 10:30 a. m. Col. W. L. O'Brien was elected Chairman, and A. J. Smith, Secretary.

The chair requested Mr. Ford to state the object of the meeting.

Mr. Ford then stated to the meeting the reasons which prompted him and his confreres to call the meeting, at the close of which he requested that the Secretary read the call to the meeting.

The Secretary then read the call, as published last week. A very considerable and lengthy discussion took place as to the best method of remedying the evils which had caused the meeting to be called.

The following resolutions were then offered, and, after a very general discussion by the gentlemen present, were adopted, viz.:

"Resolved, That we will redeem at full tariff rates any tickets or orders for tickets, of our respective issues, sold at reduced rates, which may be presented for redemption, reading to any point west of Fort Wayne, Indianapolis or Cincinnati.

"Any ticket agent using his ticket commissions to reduce the rate, or to influence business, either through his own office or through brokers or outside parties, shall, upon conviction of the violation, be suspended or discharged from the service.

"Any form of ticket sold from a competitive point at less than regular rates, shall exclude that form of ticket from sale by all lines from that point. The period for which these forms of tickets shall be taken off sale, or the guilt of a ticket agent, to be determined by a meeting of general passenger agents, representing lines terminating at the point where the ticket was sold.

"A majority of the roads parties to this agreement shall form a quorum, and any road may be represented by proxy. The complaining road shall vote for any road that is not represented in person or by proxy. The General Passenger Agent of the complaining road to call the meeting by telegraph, at the point where the violation occurred, or at the nearest and most convenient point for all parties interested. The call for the meeting to be made within three days from the date of the violation, and the meeting to be held within three days from the date of the call.

"That no forms of round-trip tickets to competitive points be placed on sale by any road subscribing to this agreement, without the rates and limits governing such forms be printed in the district rate sheet by the consent of a majority of the roads interested.

"That the Secretary furnish for signature, a copy of this agreement to every general passenger agent of lines east of the Mississippi River, and west of the trunk lines, and north of the Ohio. General passenger agents declining to sign shall be requested to assign the reason for refusing to become a party to the agreement; and in the event of such refusal being based upon the action of a competitor, an effort shall be made to overcome the objection of such competitor.

"That we re-affirm the so-called Cleveland colonists' rate sheet, adopted last November, and that the Secretary be instructed to reprint and distribute, at the expense of the parties in interest, naming for land-grant road west of the Mississippi River, one point only for round-trip tickets, which shall read to the following points only, viz:

Union Pacific, Columbus, Neb.  
Burlington & Missouri River in Nebraska, Lincoln, Neb.  
Central Branch Union Pacific, Beloit.

Kansas Pacific, Ellis.  
Atchison, Topeka & Santa Fe, Dodge City.

Missouri, Kansas & Texas, Emporia.

Kansas City, Fort Scott & Gulf, Baxter Springs.

Kansas City, Lawrence & Southern, Independence.

St. Louis & San Francisco, Neosho.

St. Louis, Iron Mountain & Southern, Little Rock.

Iowa Railroads, Le Mars, or Battle Creek.

St. Joseph & Denver City.

"That no tickets shall be placed in the hands of other than the regular authorized ticket agents of our respective roads; nor shall any orders, of whatever character, be accepted by any such regular agents.

"That this agreement take effect immediately upon notice by telegraph from the Secretary, Mr. A. J. Smith, that all parties in interest have signed it."

With a view to the assurance of the signature of all parties interest to the foregoing resolutions or agreement, the following resolution was offered, seconded and adopted:

"Resolved, In view of the uncertainty of securing all the signatures necessary for carrying out the agreement drawn up to-day, the Secretary will please forward this resolution to the Secretary of the Central Association, requesting that a meeting of that Association be called for Thursday, Oct. 16, at 10 a. m., at the Bates House, Indianapolis, to consider the objections that may be made to articles drawn up to-day, and to revise or remodel them, if it is deemed best."

The object of the meeting will be mentioned in the call.

On motion, an adjournment was made, *sine die*.

## ELECTIONS AND APPOINTMENTS.

*Atchison & Nebraska*.—Mr. C. E. Henderson is appointed General Freight and Ticket Agent, to take effect Oct. 1. Communications relating to the freight and ticket business of this company should be addressed to him at Atchison, Kan.

*Atchison, Topeka & Santa Fe*.—Mr. W. W. Borst has been appointed General Western Agent, with office in Denver, Col. Mr. Borst was recently Superintendent of the Denver & Rio Grande, and had been connected with that road from its beginning.

*Attica, Covington & Southern*.—The officers of this new company are: Thomas F. Davidson, President; Henry A. Frey, Secretary. Office at Attica, Ind.

*Baltimore & Ohio*.—From Oct. 3 the office of Mr. John King, Jr., First Vice-President of this Company, is permanently located in Cincinnati.

At a meeting of the board in Baltimore, Oct. 8, Robert Garrett was chosen Third Vice-President, a new office. Mr. S. Spencer, formerly of this road, but late General Superintendent of the Long Island road, was chosen Second Assistant to the President.

*Boston, Barre & Gardner*.—Mr. Walter M. Anthony, for some time Acting General Ticket Agent, is promoted to the full position.

*Buffalo, New York & Philadelphia*.—At the annual meeting in Buffalo, N. Y., Oct. 1, the following directors were chosen: Richard Bullymore, Cyrus Clarke, Thomas Clark, Wm. G. Fargo, George B. Gates, Wm. H. Glenn, C. J. Hamlin, Sherman S. Jewett, George J. Magee, James S. Metcalfe, F. H. Root, Bronson C. Rumsey, J. F. Schoellkopf. The board re-elected Sherman S. Jewett, President; George B. Gates, Vice-President and General Manager; F. S. Buell, Secretary and Treasurer.

*Carolina Central*.—The officers now are as follows: D. R. Murchison, A. V. Stout, J. R. Porter, Receivers; C. H. Roberts, General Manager; V. Q. Johnson, General Superintendent; F. W. Clark, General Freight and Passenger Agent; W. N. Bowden, Auditor; I. T. Alderman, Assistant Treasurer. Offices at Wilmington, N. C.

*Chicago East-Bound Pool*.—Mr. A. Mackay, the Assistant General Freight Agent of the Michigan Central, has been appointed Secretary of the East-Bound Pool from Chicago.

*Cincinnati & Portsmouth*.—Mr. Joseph Clare, of Bethel, O., has been appointed Receiver.

*Concord & Portsmouth*.—At the annual meeting in Manchester, N. H., Oct. 2, the following directors were chosen: Stephen Kendrick, John J. Bell, Samuel N. Bell, John J. Pickering, Benjamin F. Martin, Nathan Parker, Joseph B. Walker. The board elected Stephen Kendrick, President; W. H. Hackett, Clerk; Moody Currier, Treasurer. The road is leased to the Concord Company.

*Credit Valley*.—Mr. James Ross has been appointed Superintendent of Construction, with headquarters in Toronto, Ont. Mr. Ross still continues Manager of the Victoria Railway.

*Des Moines & Minneapolis*.—At a meeting held in Des Moines, Ia., the following directors were chosen: Wm. M. Jones, Des Moines; Albert Keep, Marvin Hughitt, Paul Shorey, Chicago; John I. Blair, Blairstown, N. J.; John B. Alley, Boston. The board elected John B. Alley, President; Marvin Hughitt, Vice-President; J. B. Redfield, Secretary; John S. Alley, Treasurer; J. J. Smart, Assistant Secretary and Assistant Treasurer. The road is leased to the Chicago & Northwestern.

*Galveston, Harrisburg & San Antonio*.—Mr. B. M. Hanson is appointed Eastern Passenger Agent, with office in Boston.

*International Bridge*.—At the annual meeting in Buffalo last week, Mr. E. G. Spaulding was chosen President; Joseph Hickson, Vice-President; R. Wright, Secretary and Treasurer. The bridge is leased by the Grand Trunk.

*Lake Erie & Western*.—Mr. E. Clemons has been appointed Master Mechanic, with office at Fremont, O., in place of John Pero, resigned. Mr. Clemons was recently Master Mechanic of the Pekin, Lincoln & Decatur.

*Lehigh Valley*.—Mr. James I. Blaklee has been appointed Superintendent of all the coal branches of the road. He will continue to be Superintendent of the Beaver Meadow Branch, as heretofore, but will also have charge of the distribution of cars and other duties connected with all the coal branches.

*Louisville & Nashville*.—The new board of directors elected Dr. E. D. Standiford President; H. Victor Newcomb, Vice-President; Willis Ranney, Secretary; A. M. Quarrier, Assistant Secretary. These are all reflections, except that Dr. Standiford is now President alone, instead of President and General Manager.

The following circular from President Standiford is dated Oct. 1:

"Mr. G. C. Breed having resigned the office of Assistant General Manager, the office is hereby abolished. I have this day appointed Mr. Frederick de Funiak General Manager of this line. General officers and division superintendents will report to him for orders."

Mr. de Funiak has been long connected with the road, and for some years past has been Chief Engineer and Superintendent of Machinery. His promotion has been well earned by long and able service.

*Newburg, Dutchess & Connecticut*.—The officers of this road are as follows: President, Secretary and Treasurer, John S. Schultz, Moore's Mills, Dutchess County, N. Y.; General Superintendent, Purchasing Agent and General Freight Agent, C. L. Kimball, Dutchess Junction, N. Y.

*Northern Pacific*.—Mr. James B. Powers, heretofore General Agent of the Land Department east of the Missouri River, has been appointed Land Commissioner of the Eastern Department, which includes all the land grant in Minnesota, Dakota and Montana—that is, all except the Pacific Coast lands.

*Northwestern Grand Trunk*.—General Manager Peck announces the following appointments: H. W. Chester, Cashier; W. E. Davis, Manager of Passenger Traffic; L. E. Snively, Manager of Through Freight Traffic; C. C. Jenkins, Manager of Local Freight Traffic. Offices at Port Huron, Michigan.

*Peach Bottom*.—The officers of this company are: President, C. R. McConkey, York, Pa.; Vice-President, S. Dickey, Oxford, Pa.; Secretary, W. Wallace, Oxford, Pa.; Superintendent Middle Division, S. M. Manifold, York, Pa.; Superintendent Eastern Division, J. A. Alexander, Oxford, Pa.

*Pittsburgh, Cincinnati & St. Louis*.—The following circular is issued from the office of the General Superintendent, S. M. Felton, Jr., dated Sept. 30:

"Referring to circular of the General Manager consolidating the Pittsburgh and Columbus divisions, on and after Oct. 1, 1879, all transportation officers and employees will be under the immediate control of the Superintendent."

"Mr. G. H. Kimball, having resigned the position of Superintendent of Bridges, the employees heretofore reporting to him, together with road-masters and maintenance of way employees, will report to Mr. H. S. Craig, who is appointed Engineer of Maintenance of Way, with office at Steubenville, O."

"The Superintendent, Master Mechanic and Engineer of Maintenance of Way will report direct to this office. Officers and employees will be governed accordingly."

*Raleigh & Augusta Air Line*.—At the annual meeting in Raleigh, N. C., Oct. 1, Col. John M. Robinson was re-elected President, with the following directors: Joseph P. Batchelor, Paul C. Cameron, W. W. Chamberlaine, Walter Clark, W. J. Hawkins, R. S. Tucker. The board re-elected W. W. Vass Secretary and Treasurer; J. C. Winder Superintendent. The road is controlled by the Raleigh & Gaston.

*Raleigh & Gaston*.—At the annual meeting in Raleigh, Oct. 1, the following were chosen: President, John M. Robinson, Baltimore; Directors, Joseph P. Batchelor, Walter Clark, R. S. Tucker, Raleigh, N. C.; Paul C. Cameron, Hillsboro, N. C.; W. J. Hawkins, Ridgeway, N. C.; W. W. Chamberlaine, Norfolk, Va. The only new director is Mr. Tucker, who succeeds Lewin W. Barringer. The board re-elected W. W. Vass Secretary and Treasurer; J. C. Winder, Superintendent.

*Rhode Island & Massachusetts*.—At the annual meeting last week the following board of directors was chosen: James P. Ray, Joseph G. Ray, E. G. Sweet, E. K. Ray, James M. Freeman, George W. Wiggins, Moses Farnum. The board elected James P. Ray, President; Edgar K. Ray, Vice-President; G. W. Wiggins, Clerk; Joseph G. Ray, Treasurer. The road is leased to the New York & New England.

*Skaneateles*.—The officers of this company are: John E. Waller, President; J. McNamara, Superintendent. Offices at Skaneateles, New York.

*Western Union Telegraph*.—At the annual meeting in New York, Oct. 8, the following directors were chosen: Norvin Green, Wm. H. Vanderbilt, E. D. Morgan, Augustus Schell, Harrison Durkee, Jas. H. Banker, Samuel F. Barger, Joseph Harker, Alonzo B. Cornell, Hamilton McK. Twombly, John Van Horne, Cornelius Vanderbilt, Moses Taylor, Wilson G. Hunt, Edward S. Sanford, Chester W. Chapin, Robert Lenox Kennedy, J. Pierpont Morgan, George M. Pullman, John R. Duff, Darius O. Mills, Oliver H. Palmer, Samuel A. Munson, David Jones, Anson Stager, Edwin D. Worcester, Henry M. Phillips, William D. Bishop, Hugh J. Jewett. The only change is the choice of Mr. Hugh J. Jewett, of the New York, Lake Erie & Western, in place of Cambridge Livingston, deceased, but this election is looked upon as significant.

## PERSONAL.

—Mr. S. E. Mayo died in New York, Sept. 22, of Bright's disease. He was formerly for a long time General Passenger and Ticket Agent of the Delaware & Hudson Canal Company's railroad lines; then General Agent of the People's



Line of Hudson River steamboats, and last season General Agent of the Long Branch iron pier.

—Col. Horace Scott, for 14 years General Superintendent of the Jeffersonville, Madison & Indianapolis road, finally retired from that position Oct. 1. On the occasion of his retirement he was entertained at dinner at the Galt House, Louisville, by the officers of the road, who passed the following resolutions:

"Whereas, Col. Horace Scott is about to relinquish the superintendency of the Jeffersonville, Madison & Indianapolis Railroad, a position which he has filled with consummate ability for the last 14 years and upward, be it therefore

"Resolved, That we regard with sincere and deep regret the resignation of our chief. A long and intimate association with him, both in a business and social way, has qualified us to bear testimony to his wonderful ability as a railroad manager, his indomitable energy and zeal, his inflexible integrity and high sense of honor, as well as his uniform courtesy and considerate kindness to all of the officers and employees of the company.

"These noble qualities have inspired our admiration and esteem, and endeared him to our hearts.

"Sorrowfully we take leave of our chief as a veteran legionary with his victorious general, or as an affectionate family part with its beloved head.

"Wherever he may go the fame of his good works will precede him, and our humble but sincere prayers for his prosperity and happiness shall follow."

Mr. Scott also received many flattering testimonials of esteem from citizens of Louisville and towns on the road.

—Judge Asahel W. Hubbard died in Sioux City, Ia., Sept. 22, aged 61 years. He was born in Connecticut but went to Indiana when yet a young man and practiced law in that state and afterward in Iowa, serving three terms in Congress from the latter state. He was the originator and chief promoter of the Sioux City & Pembina road, and afterward of the Covington, Columbus & Black Hills. The last undertaking broke him down financially, and he lost most of his property.

—Mr. James H. Metcalfe, one of the first projectors of the Buffalo, New York & Philadelphia road, and long a director of the company, died at his residence in Buffalo, N. Y., Oct. 5. He was a man of considerable wealth, and the head of a large pork-packing firm.

—Frank Abbott, formerly of Port Jervis, N. Y., and Secretary and Treasurer of the Locomotive Engineers' Mutual Benefit Association, was arraigned last week in the Orange County Court on the charge of embezzling about \$3,000 of the funds of the Association. His trial was set for Nov. 10, at Newburg.

## TRAFFIC AND EARNINGS.

### Railroad Earnings.

Earnings for various periods are reported as follows:

Year ending July 31:	1878-79.	1877-78.	Inc. or Dec.	P. c.
Raleigh & Augusta Air Line	\$110,593			
Net earnings	30,527			
Raleigh & Gaston	295,051			
Net earnings	69,284			
Nine months ending Sept. 30:	1879.	1878.		
Bur. Cedar Rapids & No.	\$1,039,436	\$1,131,878	D.	\$92,442 8.2
Chicago & Alton	3,046,418	3,444,272	I.	507,854 16.6
Chi. Mil. & St. Paul	5,557,000	6,102,316	I.	545,316 9.8
Chi. St. Paul & Minn.	767,200	648,007	I.	119,193 18.3
Grand Trunk	6,341,982	6,442,633	D.	100,651 1.6
Great Western	3,115,280	3,555,017	D.	439,737 14.1
Mobile & Ohio	1,519,205	1,237,992	I.	281,213 22.7
St. Louis, Iron Mt. & So.	3,257,712	2,926,732	I.	330,980 11.3
St. Louis & San Francisco	1,014,899	863,409	I.	151,490 17.5
St. Louis & Southeastern	520,754	407,743	I.	113,011 27.5
Three months ending Aug. 31:				
Texas & Pacific	\$407,564	\$432,504	I.	\$24,940 6.1
Net earnings	181,575	105,099	I.	76,476 72.8
Month of July:				
Ala. Great Southern	\$32,790	\$26,773	I.	\$6,017 22.5
Del. & H. Canal Co., leased lines	428,044	346,351	I.	81,693 23.6
Net earnings	206,961	150,159	I.	56,802 37.8
Grand Trunk	\$133,886	\$132,917	I.	\$969 0.7
Net earnings	23,737	24,181	D.	444 0.2
Month of August:				
N. Y. & N. Eng.	\$304,215			
Net earnings	108,288			
Ogdensburg & Lake Champlain	54,187	\$50,001	I.	\$4,186 8.5
Net earnings	21,062	13,091	I.	7,971 60.8
Month of September:				
Burlington, Cedar Rapids & No.	\$154,705	\$138,897	I.	\$15,808 11.4
Chicago & Alton	443,454	443,324	I.	130 0.03
Chi. & Eastern Illinois	82,050	72,404	I.	9,646 12.3
Chi. Mil. & St. Paul	1,020,000	676,307	I.	343,693 50.8
Chi. St. Paul & Minn.	108,000	83,700	I.	24,300 29.0
Mobile & Ohio	158,332	91,403	I.	67,929 73.4
St. Louis, Iron Mt. & So.	587,350	409,819	I.	177,531 43.3
St. Louis & San Francisco	190,100	119,700	I.	70,400 58.8
St. Louis & Southeastern	82,021	62,831	I.	19,190 30.6
Three weeks in September:				
Chicago, Clinton, Dubuque & Minnesota	\$30,770	\$27,893	I.	\$2,877 10.3
St. Louis, Alton & Terre Haute, Main Line	75,475	53,684	I.	21,791 40.6
Week ending Sept. 26:	\$98,692	\$98,454	I.	\$238 0.2
Week ending Sept. 27:	\$200,060	\$193,400	I.	\$6,660 3.4

### Chicago Lumber Traffic.

Receipts and shipments of lumber at Chicago for the nine months from Jan. 1 to Sept. 30 are reported as follows, in feet:

	1879.	1878.
Receipts	1,071,038,028	810,873,082
Shipments	534,624,332	448,058,654

This is an increase of 251,164,346 ft., or 30.6 per cent., in receipts, and of 85,065,678 ft., or 19 per cent., in shipments. The reports of shipments are said to be very inaccurate and greatly below the actual shipments, as is indicated by the enormous difference between the receipts and the shipments. The figures would indicate that Chicago consumed as much as it shipped, which is simply absurd.

### Advance in East-Bound Rates.

The Joint Executive Committee announced Oct. 2 an advance in east-bound rates to the basis of 35 cents per 100 lbs. for grain, 40 cents for fourth-class freight, and 50 cents for live hogs from Chicago to New York, to take effect Monday, Oct. 13.

### Southwestern Railway Association Rates.

On Oct. 1 Commissioner Midgley issued a circular establishing the following rates on freight to Missouri River points

(Kansas City, Leavenworth, Atchison and St. Joseph) in cents per 100 lbs.:

	1st class.	2d class.	3d class.	4th class.	Special.
On freight from Cleveland, O.:	85	70	45	30	25
From Chicago	85	70	45	30	25
From St. Louis, Hannibal, West Quincy or Burlington	65	50	35	20	15
On freight from Buffalo:					
From Chicago	85	65	45	30	25
From St. Louis, Hannibal, West Quincy or Burlington	65	50	35	20	15
On freight from Cincinnati:					
From St. Louis	60	45	35	25	20
From Louisiana or Hannibal	60	45	35	20	15
From Quincy, Burlington or Davenport	65	50	40	20	15
On freight from Philadelphia or Wheeling:					
From Chicago	85	70	45	30	25
From St. Louis, Louisiana, Hannibal, West Quincy or Burlington	65	50	35	20	15
From Davenport	63	52	30	17½	15

The circular says: "It must be distinctly understood that, in case the above rates are less than the local rates of the associated roads to Missouri River points, they shall apply only on business as above specified, and carried by all-rail routes to destination.

"Any arrangements conflicting with the above are hereby canceled."

### Grain Movement.

For the week ending Sept. 27, receipts and shipments of grain of all kinds at the eight reporting Northwestern markets, and receipts of the seven Atlantic ports, have been, in bushels, for seven years:

	Northwestern receipts.	Northwestern shipments.	Atlantic receipts.
Year.	Total.	By rail.	P. c. by rail.
1873	3,444,748	1,094,079	31.8
1874	4,059,940	2,820,543	37.0
1875	5,017,745	3,317,358	37.3
1876	6,217,476	4,226,204	42.5
1877	7,338,814	5,096,778	22.0
1878	5,317,775	4,484,885	29.1
1879	6,120,270	5,063,093	28.5

The receipts at Northwestern markets are the largest for three weeks, and have been exceeded but twice this year; on the other hand the shipments of these markets are the smallest since July. The rail shipments are larger than for two weeks previous, and very large for this time of year. The Atlantic receipts are larger than in the preceding week, but smaller than in any other since the middle of July last.

Of the Northwestern receipts, 47.8 per cent. were at Chicago, 14 at Toledo, 13.9 at Milwaukee, 10.3 at St. Louis, 7.8 at Detroit, 4.1 at Peoria, and 2.1 at Cleveland. Milwaukee's receipts are much the largest of the season, indicating that the crop of Wisconsin and Minnesota is beginning to come forward freely. About two-thirds of its receipts are wheat and the other third chiefly barley. Milwaukee is third among the wheat-receivers this week, being preceded by Chicago and Toledo and followed by Detroit and St. Louis.

New York received 49.2 per cent. of the total Atlantic receipts, Baltimore 23.4, Philadelphia 9.8, Montreal 9, Boston 6, New Orleans 2.5, and Portland 0.1 per cent. Philadelphia's receipts are the smallest since the middle of July, Baltimore's the largest since the first week of August.

For the nine months from Jan. 1 to Sept. 27, the movement has been, for the past six years, flour included (which is not given above) as follows:

	Northwestern receipts.	Northwestern shipments.	Atlantic receipts.
Year.			
1874	158,038,420	124,204,066	147,937,744
1875	124,030,144	126,943,131	132,679,232
1876	153,750,427	128,340,237	155,289,782
1877	134,050,840	114,970,917	130,723,589
1878	100,343,432	153,519,730	215,321,210
1879	105,531,539	173,965,519	243,404,768

Thus the business this year has been larger than ever before, the figures showing an increase of 2½ per cent. in Northwestern receipts, of 13 per cent. in Northwestern shipments, and of 13 per cent. in Atlantic receipts over the enormous movement of last year.

For the week ending Oct. 7 (Tuesday) receipts and shipments at Chicago and Milwaukee were as follows, in bushels:

	Receipts.	Shipments.
Chicago	4,192,523	2,408,419
Milwaukee	904,000	666,100
Total	5,156,523	3,074,519

Chicago receipts show an increase and Milwaukee a decrease from the previous week.

For the same week, ending Oct. 7, the previous week and the corresponding week last year, the receipts at the four leading Atlantic ports were as follows, in bushels:

	Oct. 7, 1879.	Sept. 30, 1879.	Oct. 8, 1878.
New York	4,624,801	3,743,047	4,385,018
Baltimore	1,725,637	1,870,033	799,604
Philadelphia	979,500	602,150	950,200
Boston	400,804	450,029	197,500

The four ports... 7,740,742 6,626,159 6,332,322

As compared with the previous week New York and Philadelphia show an increase, Baltimore and Boston a decrease. All the ports show an increase over last year, those of Baltimore and Boston being very large. New York received 59.9 per cent. of the total last week, and 69.3 per cent. in the corresponding week last year. Of the New York receipts last week 1,688,366 bushels—36.4 per cent.—were by rail.

### Petroleum Movement.

The production and shipments of the Pennsylvania oil regions for the months of July and August are reported as follows:

	1879.	1878.	Increase.	P. c.
Product, bbls.	3,583,590	2,508,975	984,594	38.0
Average per day	57,800	41,919	15,881	38.0
Shipments, bbls.	3,433,274	2,704,679	668,595	24.2
Average per day	55,375	44,591	10,784	24.3
New wells completed	610	530	80	15.1

The distribution of the shipments from the oil regions in July and August was as follows (in barrels):

	1879.	1878.		1879.	1878.
	Barrels.	P. c. of total.	Barrels.	P. c. of total.	P. c. of total.
New York	1,538,958	44.9	1,354,973	45.4	
Philadelphia	336,883	9.8	216,031	7.2	
Baltimore	114,524	3.3	67,378	2.3	
Boston	133,224	3.9	65,015	2.2	
Cleveland	607,401	17.7	651,186	21.8	
Pittsburgh	502,593	16.4	511,633	17.1	
Down Ohio River	35,550	1.0	14,402	0.5	
Local Points	104,141	3.0	105,477	3.5	
Total	3,433,274	100.0	2,986,095	100.0	

Of the increase since last year of 447,179 barrels in the aggregate shipments, as much as 184,000 gallons, or 41 per

cent., went to New York, and 27 per cent. to Philadelphia. There was a decrease only at Cleveland, and that not very large. The sea-board cities together received 61.9 per cent. of the whole this year, against 57.1 per cent. last year, due, doubtless, to the larger exports, which have been larger by 800,000 barrels, or nearly twice as much as the increase in shipments from the oil regions.

The exports, in gallons, for the nine months from Jan. 1 to Sept. 27, have been, for four years:

	1879.	1878.	1877.	1876.
Gallons	278,784,006	232,536,435	208,870,683	161,648,019

The percentage of the total exported from each port was as follows:

	1879.	1878.	1877.	1876.
New York	73.1	69.4	71.9	66.0
Boston	1.8	1.0	1.2	1.3
Philadelphia	18.5	18.0	12.3	30.8
Baltimore	8.1	11.5	12.1	1.9
Richmond	0.5	...	1.8	...
Portland	0.1	0.5	...	...
Norfolk	...	0.2	...	...
Total	100.0	100.0	100.0	100.0

The breaking up of the arrangement of the railroads with the Standard Oil Company seems to have been rather favorable than otherwise to New York, though we cannot be sure of this by the above figures, as the change in exports does not necessarily follow the change in receipts, some places manufacturing more than others for home consumption.

### New York State Canals.

The New York Canal Auditor publishes the following statement of tolls received on all the State canals for September and the fiscal year ending Sept. 30:

	1878-79.	1877-78.	Inc. or Dec.	P. c.
September	\$180,759.74	\$164,823.01	I.	\$15,936.73 9.7
Fiscal year	900,806.06	984,632.57	D.	74,826.51 7.6

The statement of expenses for the year has not been made up, as complete returns have not been received as yet.

### Coal Movement.

Coal tonnages are reported as follows for the nine months ending Sept. 27 (all the coal reports are made weekly alone), the tonnage in each case being only that originating on the line to which it is credited.

Anthracite :	1879.	1878.	Inc. or Dec.	P. c.
Phila. & Reading.....	5,445,081	3,416,149	I.	2,028,932 59.4
North'n Central, Shamokin Div., and Summit Branch R. R.....	601,701	531,903	I.	129,798 24.4
Sunbury, Hazleton & Wilkesbarre.....	19,104	23,580	D.	4,476 19.0
Pennsylvania Canal.....	323,947	245,195	I.	78,752 32.1
Central of N. J., Lehigh Div.....	2,800,530	1,600,371	I.	1,200,159 75.0
Lehigh Valley.....	3,086,908	2,277,885	I.	809,023 35.5
Penn. & New York.....	25,042	22,616	I.	2,426 10.7
Delaware, Lackawanna & Western.....	2,712,518	1,484,231	I.	1,228,287 82.8
Delaware & Hudson Canal Co.....	2,448,232	1,488,878	I.	959,354 64.4
Pennsylvania Coal Co.....	1,031,004	608,568	I.	422,436 69.4
State Line & Sullivan.....	35,614	23,703	I.	11,911 50.3
Total anthracite.....	18,580,681	11,723,079	I.	6,857,602 58.6



Bedford Division, Pennsylvania Railroad, at Mt. Dallas, and carried through to the main line of the same road at Huntingdon.

The actual tonnage of anthracite passing over the Pennsylvania & New York road for the ten months of its fiscal year from Dec. 1 to Sept. 27 was: 1879, 695,265; 1878, 611,486; increase, 83,779 tons, or 13.7 per cent. Of the tonnage this year 412,960 tons were received from the Lehigh Valley road; 216,241 from the Bloomsburg Division, Delaware, Lackawanna & Western; 89,872 from State Line & Sullivan, and 26,191 tons from the mines on the Pleasant Valley Branch.

#### The New Anthracite Agreement.

The following is the agreement adopted by the anthracite companies for a new combination:

First—Each company or interest to sell its coal in any manner it pleases, and to make its own prices.

Second—The sales agents to have daily, weekly or other stated meetings in a suitable room, to be provided for the purpose, in the city of New York, and embracing the features of a coal exchange, where any one may take, or assist in selling, the surplus products of another, who may be deficient in orders.

Third—If any interest cannot dispose of its coal at satisfactory prices in any month, it shall have the power to call a meeting of the Board of Presidents, at which, if no other interest or interests shall be willing to take the surplus of the company calling the meeting at a price to be approved by the Board, the said Board shall order a curtailment of production by establishing a maximum output of coal for the then current or next succeeding month sufficiently low in amount to counteract the evils of over-production, which restricted output shall be divided between the interests in the proportions which each interest will have secured of the entire output from the 1st day of October, 1879, up to the end of the month immediately preceding the respective periods at which, from time to time, curtailment may be ordered, each interest being allowed to mine its proportion during the periods of curtailment in any manner or time it pleases.

Fourth—Except during periods of curtailment there shall be no distribution of tonnage by quotas, each interest being left free to produce and ship any quantity it pleases.

Fifth—The term of the agreement to be three years and six months, commencing Oct. 1, 1879, and terminating April 1, 1883.

Sixth—At all meetings of the Board of Presidents, each shall vote a number of votes equal to the percentage of the total output his company or interest shall have secured from the 1st day of October, 1879, up to the end of the month immediately preceding the meeting at which the votes are to be cast, provided that in all matters relating to restriction of production a vote of two-thirds be required.

Seventh—It is also understood that this agreement shall not be binding unless signed by all the parties interested on or before the 10th day of October, and that the prices shall be immediately advanced.

At the time of writing (Oct. 9) it has been signed by the Pennsylvania Coal Company; the Central of New Jersey; the Philadelphia & Reading; the Delaware, Lackawanna & Western; the Delaware & Hudson Coal Company; the Lehigh & Wilkesbarre Coal Company, and the New York, Lake Erie & Western.

The Lehigh Valley refuses to sign until a meeting of the Lehigh individual operators can be held, and its adhesion is doubtful. The Pennsylvania Railroad Company expresses agreement as to the principles involved, but does not sign; its signature is not important, as it controls a production barely large enough for its own local trade.

#### THE SCRAP HEAP.

##### Railroad Equipment Notes.

The Gilbert & Bush Car Co., at Troy, N. Y., is building 75 freight cars for the Missouri, Kansas & Texas and 50 Wickes refrigerator cars for the Merchants' Dispatch Line. Also several passenger and sleeping cars and a lot of refrigerator cars to go to Australia.

The Baldwin Locomotive Works, in Philadelphia, have contracted recently to build 18 new locomotives for the Northern Pacific. Eight of these are for the new Pend d'Oreille Division on the Pacific slope, to run from the navigable waters of the Columbia northeastward; the other 10 are for the eastern end of the line, to meet the demands of increased traffic, and for use on the new Yellowstone Division.

The Lebanon Machine Co., at Lebanon, Pa., has taken a contract to build 500 box cars. The works have also orders for 19 stationary engines on hand.

The New Haven (Conn.) Car Co. is full of work, with orders ahead for some time.

The Seaboard & Roanoke shops at Portsmouth, Va., are building 50 new freight cars.

The Chicago, Rock Island & Pacific shops at Davenport, Ia., are working to their full capacity. They are chiefly employed on repair work, but lately turned out four new caboose cars.

The Erie (Pa.) Car Works have orders for 150 box cars for the Indianapolis, Cincinnati & La Fayette road.

##### Iron and Manufacturing Notes.

The Rockhill Coal & Iron Co. recently started up its Furnace No. 1, and now has both of its furnaces at Orbisonia, Pa., in the Broad Top Region, in full blast.

The New Albany (Ind.) Rolling Mill is now running full double turn on iron rails.

The Albany & Rensselaer Iron & Steel Co. has its mills full of work and employs over 2,000 men.

It is rumored that the old rolling mill at Elizabethport, N. J., has been leased by an iron company from Pennsylvania. The machinery is now being repaired and put in order.

The blast furnace at Boonton, N. J., is being repaired and made ready to start up.

The Weimer Machine Works, at Lebanon, Pa., are running 12 to 14 hours daily, and have secured an additional contract for the outfits of several furnaces and construction of eight blowing engines.

Two anthracite blast furnaces are to be built at Lebanon, Pa., by Robert H. Coleman, and it is said that a rolling mill will also be built there.

The rolling mill at Zanesville, O., has been running double turn for a month past. The blast furnace is now in blast.

In twenty-four hours the extraordinary number of 1,075 rails, each weighing 560 lbs., was turned out at the Cleveland Rolling Mill Co.'s Newburg mill. These rails are for the Northern Pacific Railroad.—*Cleveland Herald*.

The Penn Iron Co., at its new works in Lancaster, Pa., will make bar iron, fish-plates, bolts, spikes, etc., and the blacksmith shop will make car and truck forgings. The works will probably start next week. The first order to be filled is for the Lehigh Valley road.

In the month of September, just ended, the Edgar Thomson Steel Works converted 10,788 gross tons of Bessemer steel ingots. In the same time they rolled 7,557 tons of Bessemer steel rails and 1,460 tons of blooms and billets—a total finished product of 9,017 tons.

The Gautier Steel Co., at Johnstown, Pa., is full of work and is running its mills double turn.

##### Bridge Notes.

The Edge Moor Iron Co., of Wilmington, Del., has taken a contract to build a new market house of iron at Georgetown (Demerara), British Guiana, \$132,855 being the contract price.

The Cleveland (O.) Bridge & Car Works are very busy, and employ a full force of men on orders.

The Wrought Iron Bridge Co., at Canton, O., has recently taken a number of contracts for highway bridges, some of considerable size.

The Keystone Bridge Co., at Pittsburgh, is very busy finishing up its Cincinnati Southern bridge contracts, besides other work it has on hand.

The Baltimore Bridge Co. is building an iron bridge over the Mississippi for the Chicago, Milwaukee & St. Paul, on its new short line between Minneapolis and St. Paul. The bridge will be 134 ft. above low-water mark, and will have one span of 340 ft.; two of 270 ft. each; four of 60 ft. each, and one of 40 ft. It will be carried on iron piers resting on masonry foundations.

##### Price of Rails.

Steel rails continue to be quoted at \$50 to \$52 per ton, but large orders are said to have been placed at \$49 per ton at mill.

Iron rails are quoted at \$45 to \$46 per ton at mill, but the higher prices are limiting business, and few orders are on the market. Light sections have been sold at \$48 per ton at mill, and street rails at \$50 per ton.

Old rails are quoted in Philadelphia at \$90 to \$91 per ton. Large quantities of old foreign rails are reported afloat on the way to this country.

##### Cross-Braces.

An elevated railroad, to suit all the objections raised in Philadelphia, ought to be one hundred feet high, padded with gutta percha, with a screen on each side and noiseless locomotives to draw the cars, and a boulevard below two hundred feet wide, paved with vulcanite.—*Philadelphia North American*.

Philadelphians are more particular than New Yorkers.

A Boston man thinks the bearings on car axles are called journals because of their rapid circulation.

An exchange says: "Railroad sleepers in this country require 150,000 acres of timber a year." This will be news to Pullman car conductors.—*New Orleans Picayune*.

No man could ever hope to counterfeited the mingled air of injured innocence and insulted dignity which the woman who has been occupying four seats in a crowded car can put on, when at last the patience of the men who have been standing up is exhausted, and she is obliged to give up two of them.

##### The Gilbert Car Trust.

A new organization, called the Gilbert Car Trust of New York, has just been formed for the purpose of buying, selling and leasing railroad cars and locomotives. The association consists of the following persons: Uri Gilbert, of the Gilbert & Bush Co., Troy, N. Y.; John T. Terry, of the firm of E. D. Morgan & Co.; James M. McLean, Vice-President of the Union Trust Co.; Thomas Hillhouse, Assistant United States Treasurer; and John Paton, of the firm of Jesup, Paton & Co., of New York. The capital stock is \$3,000,000, divided into shares of \$1,000 each. The Union Trust Company of New York is made trustee under the agreement, and the above-named parties the board of managers.

All cars and locomotives purchased are to be paid for in full on delivery by the board of managers to the trustee, but the latter is not bound to accept delivery until the said rolling stock is leased, so that the leasing and payment may be simultaneous. The lessees must be companies owning or operating railroads, and they are to be required under the lease to keep such cars and locomotives in good repair, pay taxes, interest, and insurance, and all the necessary expenses of conducting the trust; and also make quarterly payments of a certain stipulated sum upon the cost of the rolling stock so leased, such payments being applied by the trustee toward liquidating and retiring the certificates of stock representing such rolling stock; and when such cars and locomotives are fully paid for, they are to become the absolute property of the lessees.

This plan does not differ materially from other car trusts, the aim being to supply equipment to roads, and retain the title and control of the same until it is paid for. The operations of the Gilbert Car Trust are not limited to any particular state or territory. The office of the association is at No. 115 Broadway, New York.

##### Purchases of English Steel Rails.

Recent purchases of English steel rails have been made for the Vanderbilt roads amounting in all to 35,000 tons, for delivery next year, including 10,000 for the Chicago & Northwestern. It is said that the cost, delivered, is but a trifle more than what American works ask for delivery at the same time.

##### Control over a Locomotive.

The control which a good locomotive engineer has over his engine is something remarkable. A long time ago some of the depot attendants noticed that the 1:15 train from the south seemed to stop daily at the self-same spot when coming to a stand-still at the depot, and about two months ago a mark was made to designate the precise locality. Since that time the train has not varied six inches from the mark, and some friends of the engineer have presented him a bouquet in acknowledgment of his skill.—*Springfield (Mass.) Union*.

##### Examining Employees for Color-Blindness.

Dr. James A. Spaulding has recently made an examination of the employees of the Maine Central road with reference to color-blindness, and has submitted the following report to Mr. George E. B. Jackson, the President of that road:

"DEAR SIR: In obedience to your request, made to me in August last, I have the honor to report that in the intervening time I have examined in Portland, and at various places along the road, engineers, firemen, switchmen and brakemen to the number of 68, for color-blindness, as well as to discover the general state of the eyes and vision of all the persons concerned.

"The men were first examined separately to see what vision each had in the eye. For this purpose, Snellen's standard type were set up at 30 feet, and the amount of vision then denoted by a fraction; the denominator representing the distance at which the standard type should be seen, the numerator the distance at which it was seen. Afterward each man was tested with Snellen's colored type, and made to name each color. Finally, Prof. Holmgren's worsted test was employed, with very satisfactory results.

"Eight men were found who were deficient, from the European standpoint of perfect sight in both eyes. Of these eight, three afterward presented themselves, and are to be furnished with proper glasses. Thus the vision of both eyes will be as nearly equal as possible, so that in case of injury to the better eye, from cinders or blow, the other eye may be enabled to do good service until relief can be gained.

This question of having both eyes in good order seems to me very important in the case of railroad employees, when we consider how frequently one eye, at least, is liable to be interfered with by cinders or gravel. The other five men should be examined further. Besides testing vision, the eyelids and their lining membranes were also examined in each case, as well as the field of vision.

"Of color blindness but two cases were found, one in healthy eyes, the other in eyes threatened with loss of sight and needing medical treatment, when colors may be again well perceived. This was a case of red-green blindness. The other case was one of green blindness, in which green is liable to be confounded with yellows, white, shades of gray and light browns.

"The testimony of firemen who have been on engines with this man, at various times for long periods, is to the effect that there has never been any hesitation on his part in distinguishing between the danger and safety signals, which he does by variations in their intensity of light.

"If this examination has done nothing else, it has demonstrated the impossibility of any engine on the Maine Central Railroad falling into the hands of both engineer and fireman who have even the least deficiency in color perception.

"Herewith, I enclose the certificates in each case, showing a remarkably good state of affairs on the road, in so far as the vision of the employees is concerned.

"FORM OF CERTIFICATE.

"PORTLAND, Me., October, 1879.

"Maine Central Railroad:

"This is to certify that I have this day examined the eyes of John Smith, and found the vision in the right eye perfect, 20-20; left eye, good 18-20; perception of colors is good.

"Ophthalmic Surgeon."

"In closing, I would recommend that in future every man applying for the position of fireman or engineer, or other position where good eye-sight is required as well as good color vision, be rejected, unless his vision in both eyes, as well as his perception of colors, is perfect. In this recommendation, I am borne out by the action of the ministers of railway supervision in Sweden and Norway, Denmark, Holland and Belgium, and by that of railroad officials in Germany, Austria and France. The fact that no accident has ever yet been proved surely to proceed from color-blindness, proves nothing against the theoretical possibilities of its occurrence. It only proves that color-blind employees on railroads are shrewd enough to judge by the brightness of a light whether it indicates danger or safety, but there may come a time when a dense and sudden fog will reduce the intensity of a red light to that of a green, and an accident will ensue, unless either the fireman or the engineer be of perfect color vision."

##### A Prophetic Warning.

The St. Louis *Republican* says: "The following genuine epistle, written in sober earnest, seems to forecast a secret which will be of moment to others besides railroad men, and was received yesterday by Mr. Frink, General Passenger Agent of the St. Louis, Iron Mountain & Southern Railroad. It is not customary for railroad officials to give out important railroad secrets in advance to the press, but the communication having been referred to Mr. Soper, that gentleman for once unbent himself from an austere rule of the company and handed it to the *Republican* representative for publication. Here it is in its original dress:

"ST. LOUIS, Mo., Sept. 28, '79.

"No. 40.

"Mess. S. Frink, agent St. L., I. M. & S.:

"GENTS: I have some valuable information for you if you will receive it. I have had some Jewish Dreams Concerning R. R. Business and the Well-Faire of the People. Did Dream that Lord Will Send a Flood on the People and it Will Wash a Way R. R. & R. R. Bridge all over the Country and the People will (be) in the Greatest Confusion that has Bin Known For Many Years. The Dates that I did Dream it (were) June 5th, '78 and Sept. 8, '78 and April 15th, '79 and Aug. 12th, '79 and it appeared as if it Wood Com to pass in 1880 or shortly after Wards. Gents, Please Keep this Letter for a Ref, and Oblige Yours.

"WM. PLANT."

##### Proposals for Tunnel Work.

The Committee on Improved Sewerage for Boston, will receive, at the office of the City Engineer, City Hall, Boston, Mass., until Oct. 17, sealed proposals for building the Dorchester Bay tunnel. Each bid must be accompanied by a bond in \$2,000, executed by two residents of Massachusetts, conditioned for the execution of the contract in case the bid is accepted, and the successful bidder will be required to give security in \$50,000, the city also to retain \$25,000 as additional security until the completion of the contract. The bids will be compared on the basis of the Engineer's estimate of quantities of work to be done, which is as follows: 6,984 linear feet of tunnel; 461 linear feet of shafts; 160 linear feet of iron cylinders, and 3 bulkheads about shafts.

Specifications may be obtained and plans seen at the Engineer's office, Improved Sewerage, No. 74 Tremont street, Boston.

##### An Erie Conductor on Consolidation Engines.

"When you state that you think the Erie company made a mistake in adopting the 52-ton engine, I think you're wrong," were the words addressed to a reporter of *The Gazette* recently by an Eastern Division conductor.

"Why do you think so?" inquired the reporter.

"Well," said the conductor, "in the first place, the company could not now transact its business with the motive power formerly used. It would put so many trains on the road that they could not be handled. Whereas, formerly trains were composed of only 20 cars, they now have 40; so you see, that if they had not the large engines, there would be just twice as many trains, and at this time, with the small engines, would keep the men working night and day, and there would be no end of grumbling."

"Is there, then, so much more business done than formerly?"

"Well, I should say there is. Why, a year ago last July my train-book records 22 days, and July of this year 24 days; so you see I am talking of something I know."

"Well, Mr. C—, you say that formerly only trains of 20 cars were drawn, while now they have 40; did they not formerly draw 30 cars from Turners to Jersey City, and also get along without pushers at various points?"

"As you say, we did haul 30 cars from Turners, starting from Port Jervis with 20 cars. But those cars were taken to Turners and there left, the engines returning to Port Jervis. In eight cases out of ten the engine returned 'empty,' or without cars, no empty cars being at Turners, and one or two gangs being sufficient to collect all the way cars. That is now done by the 'Horn' trains, of which there are four. You can easily perceive that the item of increased expense on that account is disposed of."

"What is your opinion in regard to the wear and tear of the road by the use of these heavy locomotives? Is it not considerable?"

"Well, I am not fully competent to answer that question, but I have always looked upon the 'jimmy' as being much more severe on the end of rails than a heavy and well-bal-



anced body like the engine we are talking about. I think it takes more fuel—of course it must—and consequently is harder work to fire one of this class."

"You say it is harder work to fire one of these engines; how about handling the train? Is your present force sufficient? I understand it has not been augmented any."

"To tell you the truth, it is harder work. The force is not sufficient. Very often it is necessary for one to get on top and assist the 'boys,' and, although I am not unwilling to do it, and, in fact, am far better off, as far as health is concerned, yet, at times, when on top, I am greatly disturbed, as one cannot do two things at once. Running a train and braking are separate businesses, and one in charge of a train should not be forced to do any of the latter. To run a train between Suffern and Jersey City requires the entire attention of the conductor, without his being called upon to get on top. The addition of another man will become a necessity during the coming winter."

"Well, what you say in regard to the usefulness of those engines seems reasonable, in part, but there is no gainsaying the fact that one of them is in the shop at this place for general repairs, and judging the others by this one, they will soon have to follow it, will they not?"

"The 520 is a Delaware Division engine, and I know nothing about that part of the road. But I have an engineer, 'Old B'—as we call him, and he says his engine is all right. She has only been in the shop for two days since she was put on the road. Unless some accident happens she is good for another nine months."—*Port Jervis (N. Y.) Gazette.*

#### Pennsylvania Steel Company.

At the annual meeting of the stockholders of the Pennsylvania Steel Company held at Philadelphia Oct. 1, the following directors were elected: Samuel M. Fenton, Thomas A. Scott, Charlemagne Tower, Edmund Smith, William Matthews, William M. Spackman, of Philadelphia; Francis Thompson, of Boston. The following brief statement in regard to their business is interesting:

Steel rails made in the year, tons.....	70,046
Pig-iron made in two furnaces, tons.....	35,664
Steel forging, etc., tons.....	7,734
Capital stock.....	\$2,000,000
Bonds.....	300,000
Total.....	\$2,300,000
Surplus Aug. 31, 1879.....	1,589,359
Total.....	\$3,889,359

The company owes nothing save as above, \$300,000 in bonds. A semi-annual dividend of 5 per cent. was declared, payable Oct. 15, making 9 per cent. for the year.

#### The Jay Cooke Estate in Bankruptcy.

The committee of creditors of the Jay Cooke estate last week declared a third cash dividend of 2½ per cent., payable on and after Nov. 3. They also declared an "asset scrip dividend" of 10 per cent., in accordance with the provisions of the plan for closing the estate, the certificates of which will be delivered to the creditors at the time of payment of the cash dividend.

#### An Odorous Obstruction.

Railroad collisions, as a general rule, are not very humorous occurrences; but the other night one happened on the Buffalo road, near Allen street, which certainly will be remembered by a certain engineer and a certain fireman as long as they live. It seemed that some young festive spirits had been out for a lark, and somewhere in the vicinity of the Allen street crossing they came across a large barrel of swill. Mischief immediately introduced the boys to the barrel, and they very carefully removed it to the center of the western freight track. On the way they came across some window blinds, which they immediately impressed into the service to decorate the barrel. Placed on the top, as formidable an object was erected as Don Quixote's wind-mill. Hardly had they got the thing in position when a freight train came thundering up the hill. When near enough to discover the obstruction the engineer whistled "down brakes" and reversed his engine. He did not know whether he was about to collide with something from the shadowy world or a political caucus. The crash came, however, and instantly afterward there was a scattering of staves and vegetable matter most odorous to perceive. It seemed as if the remnants of a Thanksgiving dinner, given during the administration of Jefferson, were flying in the air. We need not say that the locomotive was embellished as never it had been before, nor need we tell how the good people along the line, through Chili, Riga, and on to Crittenden, were nearly smothered, and did not know whence came the pestilential air. Perhaps it would be too personal to give the name of the engineer and state why it was that he procured new clothes in Buffalo and shaved off his long standing whiskers. The gossips do say that some of the young men who put up the trick had the pleasure of tasting the vegetarian banquet; but then people will talk, you know. One thing is certain, however, that the good-looking police officer on that beat was not in the neighborhood at the time, and it is decidedly cruel for his brother officers to use "phew," "phew," "walk along, John," "g'of from dah," and other mysterious expressions, when he comes in for roll-call.

As it was, the obstruction caused no serious accident, but those young men should remember that they committed a criminal offense, and their foolishness might have caused a casualty.—*Rochester Democrat and Chronicle.*

#### Big Trains.

The Wabash boys are cackling over a big achievement yesterday. Engine 42, Ed. Shell at the throttle, hauled 60 cars loaded with grain from this city to Toledo, making the distance in 5 hours and 40 minutes, including all stops. The aggregate weight of the load was — lbs. To-day the same engine pulled 101 cars, 97 empties and 4 loads, from Toledo to Fort Wayne. These are pronounced the biggest "pulls" on record.—*Fl. Wayne Sentinel, Sept. 30.*

#### A Railroad Family.

There is a widow lady living at Rowland station on the Honesdale Branch of the Erie, who has lost six sons while following the business of railroading, and the seventh, her last and only dependence for support, is following the same vocation as his deceased brothers. The Erie Company ought to settle a liberal pension upon that widow.—*Hornellsville Times.*

#### A Train Wrecker's Sentence.

Henry Locks, who lately placed obstructions on the Lake Shore track and then tried to flag a train, hoping to secure some reward for himself, was tried last week in Buffalo and convicted, but got off with \$150 fine, which seems to be a very light sentence.

#### One Day's Record.

The following record of accidents to Erie employes is from a single issue (Sept. 24) of the *Hornellsville (N. Y.) Daily Times*:

"M. Keefe, of this place, a brakeman on the Susquehanna Division, was struck on the head by a low bridge near Binghamton yesterday. He fell upon the car insensible, and rode probably 20 miles before his condition was discovered. It

is a wonder that he did not roll off. He was brought home and is doing nicely, having sustained no dangerous injury."

"Daniel Reilly, brakeman on the Western Division, fell from a box car near Carleton yesterday, sustaining a severe injury to his ankle."

"Michael McMann fell from a coal dump in the yard this morning. He struck upon his head and shoulders, and received injuries that may prove fatal."

"As we write we are informed that a man named Shay, a track laborer, was killed at Cuba yesterday. While coupling cars he stumbled, fell upon the track, and was run over."

#### A Gunpowder Accident.

A report from Honduras, Central America, says that 400 kegs of gunpowder exploded Sept. 16, on a train on the Honduras Railway, when it was about 10 miles from Port Cortez. The whole train of freight and passenger cars was literally blown to pieces and 110 passengers and train-men are said to have been killed. The cause of the explosion is not given.

#### A Curious Accident.

Mr. William Murray, section-master on the Housatonic road, had his leg badly fractured this morning. He was engaged with his men, just above the depot, in cutting some iron rails. The workmen had cut around the rail with a chisel, and then placed the chisel on top of another rail which lay on the ground. Several of them then picked up the rail which they wished to break, and dropped it on the chisel and rail for that purpose. The chisel, when struck by the upraised rail, flew back, striking Mr. Murray in the leg. He fell to the ground in a fainting condition, and after he had been restored he was removed to his home, in East Bridgeport, in a carriage, and Dr. Martin rendered the necessary medical aid.—*Bridgeport (Conn.) Standard, Oct. 1.*

#### Tramps.

On Oct. 5, a party of 13 tramps boarded a Maine Central freight train near Cumberland, Me., and took temporary possession thereof. The train was finally halted on the iron bridge at Lewiston, and several of the men were arrested.

When the train from the West arrived at the Perry street depot last evening, Officers Falkner and Gartland discovered a man lying on his back on one of the brake beams under the sleeper. The fellow either was, or pretended to be, asleep. When he was pulled out and asked what he was doing there, and if he didn't know he'd get killed, he laughed and said, "What's the difference? There are plenty more of the same kind." A few minutes later, he was found trying to get back in the same position, and thereupon was placed under arrest. He gave his name as John Edwards, and said he had ridden on the brake—it was only six inches wide—from Wilton Junction last night, and was on his way east. A pair of pants and a shirt made up his entire clothing.—*Davenport (Ia.) Gazette, Oct. 1.*

#### OLD AND NEW ROADS.

**Atchison, Topeka & Santa Fe.**—The track is now laid on the main line of the Cowley, Sumner & Fort Smith Branch to Winfield in Cowley County, Kan., which is 38 miles from Wichita, and 25 miles south by east from El Paso, where the Wellington Branch of this line (whose completion was recently noted) turns off. The main line of this branch is to be extended from Winfield down to Arkansas City, near the Indian Territory line.

On the New Mexico & Southern Pacific extension work is now in progress on the section of 100 miles from Las Vegas west by south to San Domingo on the Rio Grande, and track-laying will soon be in progress from Las Vegas. The line as located passes about 15 miles to the southward of Santa Fe, and a branch will probably be built to that town.

The organization has been completed in Boston of the company which is to extend this road from El Paso on the Rio Grande through the Mexican States of Chihuahua and Sonora to Guaymas on the Gulf of California. The parties concerned in the organization are Boston capitalists, who are said to be able to command all the money needed to build the road, and it is said that their intention is to push it through with all possible dispatch. Mr. Wade, of Boston, is to go out to Mexico at once, as Vice-President and Agent of the company, to attend to its interests in that country.

**Attica, Covington & Southern.**—This company has filed articles of incorporation in Indiana for a railroad from Attica southwest to Covington, and thence south to Montezuma, following the line of the Wabash & Erie Canal. The distance is about 35 miles.

**Baltimore & Ohio.**—At the regular meeting of the board in Baltimore, Oct. 8, it was decided to declare a cash dividend of 4 per cent. for the half-year just closed, and also the usual 5 per cent. dividend on Washington Branch stock. The office of First Vice-President King has been permanently located in Cincinnati, the company believing it necessary to have a representative there to look after its interests in the West.

**Bangor & Bucksport.**—This road was surrendered to the company by the European and American trustees on Oct. 1, and the company is now working it, using leased engines and cars until the new equipment is received and arrangements completed for changing the gauge.

**Belleville & Eldorado.**—Work is in progress on the extension of this road from Benton, Ill., westward 18 miles to Duquoin, the terminus of the St. Louis, Alton & Terre Haute's Cairo Short Line. This extension will make the road 50 miles long, from Eldorado to Duquoin. It is built in the interest of the St. Louis, Alton & Terre Haute, that company expecting to secure considerable local business through the new connection.

**Boston, Barre & Gardner.**—A majority of the bondholders have accepted the reduction of interest from 7 to 5 per cent., but a considerable minority still hold out, and are said to be considering what legal steps they can take to enforce their rights. Nothing has been done as yet, however, and it is said to be doubtful what course will be taken.

**Boston, Concord & Montreal.**—This company will take an appeal to the New Hampshire Supreme Court against the assessment of taxes made upon its property this year, on the ground that it is excessive and unequal. The amount is very much larger than last year.

**Caledonia, Mississippi & Western.**—The opening of this road to Caledonia, Minn., 14 miles from the junction with the Chicago, Clinton, Dubuque & Minnesota, was noted last week. Tracklaying is now in progress west of Caledonia, the grading being nearly all done to Preston, in Fillmore County, 36 miles west. It is expected that cars will run to Preston this year.

**Canada Central.**—A meeting of the stockholders was held in Brockville, Ont., Oct. 3, when all arrangements were made to transfer the road to Worthington & McIntyre. The road is a consolidation of the Canada Central and the Brockville & Ottawa, and owns a line from Brockville, Ont., to Ottawa, 72½ miles; an extension from Carleton Place to

Pembroke, 75¼ miles, and a branch from Smith's Falls to Perth, 11 miles, 159 miles altogether.

**Canadian Pacific.**—The government has decided to call for bids for building 120 miles of the road from Yale to Kamloops, on the British Columbia end of the line. It appears from this that what is known as the Burrard Inlet route has been finally adopted.

**Chicago, Burlington & Quincy.**—Track on the Brownville & Nodaway Valley Branch is now laid to Braddyville, Ia., 11 miles south of the late terminus at Clarinda, and 27 miles from the junction with the main line at Villisca. Regular trains are running to Braddyville.

Regular trains are now also running over the extensions, lately noted, of the Chariton Branch from Leon, Ia., to Mt. Ayr, and of the Albia, Knoxville & Des Moines Branch from Knoxville to Pleasantville.

**Chicago & Northwestern.**—This company has bought the Toledo & Northwestern road, a little branch running from Tama City, Ia., to Toledo, three miles. It was owned by local stockholders, had no bonded debt, and has managed for several years to earn its expenses and pay dividends. It will probably be extended from Toledo northward 10 or 15 miles.

The Des Moines & Minneapolis road, lately leased, is to be changed from 3 feet to standard gauge.

**Chicago & Western Indiana.**—Work is progressing steadily on this road, which is to furnish the Chicago & Eastern Illinois with an entrance into Chicago. The grading is well advanced, and track has been laid from Dolton, Ill., the southern terminus, northward 10 miles, completing about half the road.

**Chicago, Milwaukee & St. Paul.**—This company has now a large force at work on its new connecting line between St. Paul, Minn., and Minneapolis. The road generally skirts the river bank; it will be provided with safety-gates where it crosses streets in the two cities, and will have a freight branch in East Minneapolis. The new line will be 8¼ miles long, built in a very substantial manner, and will be a pretty expensive piece of railroad. It requires some very heavy earth and rock-cutting through the bluffs along the river, one cut being 4,800 feet long, with an average depth of 25 feet. There will also be a bridge over the Mississippi 1,164 feet long, and 134 feet from low-water mark to the top of the rail. Some of the piers will be of masonry and some of iron columns, and the work on these is now well advanced. The company hopes to have the line ready for business by Jan. 1 next.

**Clover Creek Valley.**—It is proposed to build a railroad from Martinsburg, Pa., on the Morrison's Cove Branch of the Pennsylvania Railroad, eastward through Clover Creek Valley to Rebecca Furnace. The distance is about five miles, and the road will reach valuable deposits of iron ore.

**Dennison & Pacific.**—Work is now in progress on the extension of this road from Whitesboro, Tex., southwest. The grading is done for some distance, and tracklaying was to be begun this week.

**Denver Pacific.**—The Court at Denver has granted an order substituting Jay Gould and Russell Sage for A. G. Dulman and C. E. Evans as trustees under the mortgage. Receiver Clayton has also been ordered by the Court to turn over the property to the trustees at once. It will, as soon as the transfer is completed, be again operated as a branch of the Kansas Pacific. The new trustees now own nearly all the bonds.

**Denver, South Park & Pacific.**—This company is now offering, through Winslow, Lanier & Co., of New York, an issue of 7 per cent., first-mortgage sinking-fund bonds, having 25 years to run. The price is fixed at par and accrued interest. The total issue is to be limited to \$12,000 per mile on 208 miles of road, of which over one-half is now in operation. The main line from Denver to Leadville will be 165 miles, of which 104 miles are completed; a branch of nine miles to Morrison is also completed and in operation.

**Elkton & Delaware Junction.**—A survey is to be made of this line, which is to run from Elkton, Md., on the Philadelphia, Wilmington & Baltimore, southeast to Middletown on the Delaware road, about 15 miles. It would serve some local interests and make a convenient cut-off for Delaware business bound to Baltimore.

**Glencoe, Pinconning & Lake Shore.**—This little Michigan lumbering road has changed its name, and will hereafter be known as the Pinconning Railroad.

**Grand Rapids & Indiana.**—The trustees will receive at their office, No. 23 Fifth avenue, New York, until Oct. 31, proposals for the sale to them of the whole or any part of \$70,000 of the first-mortgage land-grant bonds dated Oct. 1, 1879, as provided by the terms of the mortgage.

**Grand Trunk and the Great Western.**—A meeting of Great Western shareholders in London, Oct. 2, adopted a resolution approving the policy of the directors on the question of fusion of the net receipts with the Grand Trunk. The amendments to appoint a committee of shareholders to confer with the boards of both companies, and that the boards be instructed to defer any action which would tend to prevent fusion, were negatived. It is stated that Colonel Grey and James Ball of Glasgow, two of the Great Western directors, would go to America to confer with Vanderbilt and other railroad authorities.

**Gulf, Colorado & Santa Fe.**—The Governor of Texas refuses for the present to issue land certificates for the extension of this road last completed, on the ground that the bridge over the Brazos has been carried away by a freshet, and until it is replaced the road is not a continuous line as required by law, although it conforms to the requirements in all other respects.

**Hannibal & St. Joseph.**—An active canvass for proxies is being made in New York, and it is said that an effort will be made to put several new directors in the board at the annual meeting next month.

**Illinois Central.**—This company will build a short connecting line in Chicago, including a bridge over the Chicago River, to secure a more direct connection with the Chicago & Northwestern tracks, and avoid the long detour now necessary in transferring cars.

**Indiana, Bloomington & Western.**—It is stated that this company has made arrangements to secure an independent line into Peoria, by building nine miles of road from Pekin to that city. Its line at present ends at Pekin, and it has depended upon leased tracks to get to Peoria, and has several times had much trouble in consequence.

**Jacksonville, Northwestern & Southeastern.**—This company has been reorganized by the bondholders, and is now known as the Jacksonville & Southeastern.

**Jersey City & Communipaw.**—This company has been organized to build a short spur from the Central Railroad of New Jersey at its Communipaw terminus to a point in Jersey City. It will be a mile long, and its chief object is to secure the Central a depot in Jersey City, which it has long



wanted. Its construction will require a bridge over the Morris Canal basin, over which there will probably be a fight, as the construction of a bridge there has been strongly opposed.

**Keokuk & Northwestern.**—This company has secured a vote of \$75,000 tax from Keokuk, to build the road from that place to Donnellson. Other local subscriptions have been secured, making about \$264,000 in all, leaving only \$28,000 more to be raised to complete the sum required to build the road from Keokuk, Ia., to the north line of Henry County. The company hopes to begin work soon, and to finish a section of the road this year, if iron can be had.

**Logansport, Crawfordville & Southwestern.**—Under the terms of the decree under which this road was lately sold the first-mortgage bondholders have the power, if they act before Oct. 10, to release the road by the payment of \$250,000 in cash, and the remainder in first-mortgage bonds. Should they fail to do so, the sale will then be confirmed. The bondholders met recently, and appointed a committee to take charge of their interests. The committee issued a circular calling upon all bondholders to send 15 per cent. of the face value of their holdings in cash to the Farmers' Loan & Trust Company at once. They will receive in return negotiable certificates, bearing 7 per cent. interest, which, if the necessary amount be raised and the road redeemed, will be convertible after reorganization into 7 per cent. first-mortgage bonds or cash, as the new company may elect. They are also asked to deposit their bonds with the same company for purposes of reorganization. It is hardly possible that the necessary action can be taken in time.

**Louisiana Western.**—Work is being pushed steadily on this road and the laboring force has lately been increased. A large lot of rails have been delivered at Orange and tracklaying will now proceed from the western end of the line. From Lake Charles, La., the central station, track is now laid eastward 14 miles, and more rails have lately arrived.

**Mobile & Alabama Grand Trunk.**—A correspondent of the *Mobile Register* says of the proposed extension of this road, "The President of the company has received written propositions from reliable contracting parties in the North, to build the Grand Trunk road from its present terminus near Jackson, to Uniontown, including a combination iron truss bridge across the Tombigbee River, and the extension from Three-mile Creek into this city, taking in part payment therefor \$600,000 in first-mortgage bonds of the new issue at par. This contract will involve cash payments to the amount of \$500,000, and efforts may be confined, therefore, to placing additional bonds for that sum. Of the subscriptions taken for the premium bonds last year, it is probable that \$200,000 will be transferred to the new bonds proposed, responsible Northern contractors and capitalists having signified their confidence in the soundness of the security, by pledging themselves to take \$800,000."

**Monterey & Salinas Valley.**—The reported sale of this road to the Southern Pacific Company is confirmed, and it is understood that the purchaser will soon change it from 3 feet to standard gauge. It extends from Monterey, Cal., to the Southern Pacific at Salinas City, 18½ miles.

**New York, Lake Erie & Western.**—A dispatch from London, Oct. 8, says: "A meeting of the Erie share and bondholders was held here to-day to consider the steps to be taken in reference to the election of directors at the annual meeting in New York on Nov. 25. Sir Edward Watkin, president, and urged the necessity of registration and the forwarding of proxies, so that at the election the bondholders may have as large an amount of representation as possible. As showing what rumors are afloat, he said he had just received a telegram from Mr. Jewett, the President of the Erie Company, saying that a person in New York claimed to have a cable dispatch to the effect that Sir Edward Watkin had started for New York on Saturday, prepared to transfer the Trustees' proxies to W. H. Vanderbilt. Of course no such transfer was contemplated. He hoped it would not be necessary for himself or for any Trustee to go to America; but he would go if it was necessary. Mr. Powell, one of the speakers, said that Mr. Vanderbilt was a man of great position in America, but it must not be assumed that it would be a good thing for the Erie road to pass under his control. A resolution was adopted urging this share and bondholders to register, and send their proxies to the Trustees."

**New York & Manhattan Beach.**—The New York Supreme Court has decided the suit brought by S. H. Hinkley to restrain this company from distributing among its stockholders 5,000 shares of the stock of the Manhattan Beach Improvement Company. Mr. Hinkley claimed that as a holder of \$10,000 of the second-mortgage bonds of the company, his rights would be violated by the distribution of these shares, they being the proceeds of the sale of real estate belonging to the railway company which was subject to the second mortgage. The Court continues the temporary injunction, holding that the proposed distribution is illegal.

**Northern Pacific.**—The line of the Pend d'Oreille Division, as finally located, is from the Columbia River near the mouth of Snake River, northwest by Spokane Falls to Lake Pend d'Oreille in Idaho Territory, a distance of 209 miles. A force of 300 men is reported at work, and the company intends to finish 40 miles this season, and to continue work on the grading through the winter as far as the weather will permit.

**Ohio & Mississippi.**—The New York *Bulletin* of Oct. 7 says: "The Reconstruction Committee have received a reply from the representatives of the Springfield Division bondholders declining to come in under the reorganization plan, on the ground that under the Drummond decision their bonds are valid, and they will not therefore consent to any scaling down. The committee are asked to open fresh negotiations for a settlement; but this, it is stated, has been refused. Mr. Whitworth, the Chairman of the Reconstruction Committee, said yesterday that he was utterly opposed to any further negotiations with the holders of Springfield Division bonds or their representatives, and, as far as he was concerned, he would take no further part in any such proceedings. Since the committee began their work, these very bonds have nearly doubled in value, and he had already had quite enough trouble in aiding to bring about that result. The money is now all ready to pay the coupons on second-mortgage bonds due Oct. 1, and will be disbursed as soon as there is an order from the Court to that effect."

**Philadelphia & Reading.**—It may be remembered that on the night of Oct. 4, 1877, a train carrying a large number of passengers from a reunion of the Pennypacker family at Schwenksville on the Pickering Valley Branch of this road, ran into a wash-out near Kimberton, killing seven persons and injuring nearly 40 more. A large number of suits for damages resulted from this accident, and one, that of Harmon Anderson, has just been tried in Lancaster County, having been carried there on a change of venue to free it from local prejudice. A long trial resulted last week in a verdict of \$3,500 for the plaintiff, the jury deciding that

the fault was with the company. This is regarded as a test case, and the company will carry it up to the Supreme Court. The other suits will probably await the final decision in this one.

The trains of the New York & Philadelphia New Line began to run to and from the Germantown depot at Ninth and Green streets, Philadelphia, using the new connecting line, on Oct. 6, and now all arrive at and leave that depot. Local trains on the North Penn & Bound Brook Division still continue to use the old depot at Third and Berks street.

**Pittsburgh & Lake Erie.**—A special meeting of stockholders was held in Pittsburgh, Oct. 6, which is thus reported by the *Pittsburgh Telegraph*:

"Of the \$2,000,000 common stock \$1,300,000 was represented at the meeting. The question of setting apart a portion of the common stock as preferred was fully discussed in all its bearings, and evoked a good deal of lively talk during the meeting. This, or some such step, was mainly necessitated by the growing demand on the part of the road for new rolling stock, sidings, etc. The business of the road has exceeded its friends' most sanguine expectations, but a fund for the above purpose was imperatively needed. Finally the question of compelling delinquent subscribers to pay up the stock for which they originally subscribed was taken up. A committee, consisting of Messrs. David Hostetter, J. M. Bailey and John Reeves, was appointed to investigate this matter. Already their efforts have been successful, and before the meeting adjourned half of the money necessary for the wants of the road (\$800,000) was raised. It is scarcely probable that an issue of preferred stock will be necessary. The project was approved by the stockholders generally. The fund raised is to be expended for freight cars and locomotives, as well as for improvements to road-bed."

**Pittsburgh, Wheeling & Kentucky.**—The suit to restrain this company from extending its tracks across the property of the Baltimore & Ohio in Wheeling, W. Va., has been transferred to the United States Circuit Court. That court has referred several issues in the case to a Master to take testimony and report, and a hearing will hardly be had before the January term.

**Plymouth, Kankakee & Pacific.**—There is a report that this almost forgotten project will be taken up, and track laid on the old graded road-bed from Plymouth, Ind., to Kankakee, Ill., and thence westward.

**Poughkeepsie Grand Junction.**—This company manages occasionally to send out a corps of engineers to make a few surveys on the line it proposes building from the Poughkeepsie Bridge to some point on the Erie. Just now they are said to be running a line from Pine Bush, N. Y., to Port Jervis.

**River Falls.**—Surveys have been made for an extension of this road from River Falls, Wis., down the Trimbelle to the Mississippi nearly opposite Red Wing, and thence down the east side of the river to a point opposite Winona. The company is now said to be negotiating for local aid for this extension.

**St. Louis & San Francisco.**—A dispatch from St. Louis Oct. 4, says: "In an interview with Judge Baker, Vice-President of the St. Louis & San Francisco Railroad, to-day, that gentleman foreshadowed a project for the speedy extension of that road from Vinita, Indian Territory, its present western terminus, to some point in New Mexico, a distance of some 600 miles. The proposition is to have what is known as the Central Division of the Atlantic & Pacific Railroad, extending west from Vinita, sold under foreclosure of mortgage, with the consent of the bondholders, who, of course, will become purchasers, and carry the road across the Plains as rapidly as it can be constructed. Judge Baker says ample funds to buy the Atlantic & Pacific and the St. Louis & San Francisco roads are already provided, and that if the contemplated arrangement is made with the Atlantic & Pacific bondholders—and the Judge says most of them have already sanctioned the scheme—men will be at work on the extension within three months. The purpose is to connect with the Southern Pacific, which already has 800 miles of track, and thus form another transcontinental line."

**St. Paul & Sioux City.**—This company having absorbed by consolidation the Sioux City & St. Paul, the Worthington & Sioux Falls and the other branch lines completed or under construction, they will all hereafter be known and worked under the title of the St. Paul & Sioux City Railroad.

**Santa Barbara & Southern Pacific.**—An attempt is being made to raise money to build this road from the town of Santa Barbara, Cal., to the Southern Pacific at Newhall, a distance of 86 miles. An effort is to be made to raise money on the line to build and equip the road.

**Selma & Greensboro.**—The trains of this road have heretofore used the Alabama Central track from Marion Junction to Selma, Ala., 14 miles. A contract has now been concluded by which the road will be extended from Marion Junction southeast seven miles, over a road-bed graded some years ago, to Saltmarsh on the New Orleans & Selma road, 10 miles from Selma. It will then run to that city on the New Orleans & Selma track, and the two companies will build a new depot in Selma.

**Selma & Gulf.**—The Alabama Court of Chancery has confirmed the sale of this road to Mr. Sullivan, President of the Pensacola Railroad Company.

**Silver Lake.**—This little road, running from Perry, N. Y., to Gainesville, 6½ miles, is to be changed to 2-foot gauge. All preparations have been made, and the change will be made as soon as the new engine and cars are received. The road was originally built as part of the Rochester, Hornellsville & Pine Creek, and is the only section of that projected line that was ever completed.

**Southern Minnesota.**—The track is now laid, and trains are running to Fulda, Minn., 37 miles west of the late terminus at Jackson, 14 miles beyond the Sioux City & St. Paul crossing, and 254 miles from La Crosse. The extension is built by the Southern Minnesota Extension Company, a separate organization, and is leased and worked by the Southern Minnesota.

**Sterling, Stafford & Livingston.**—This company has been organized to build a railroad from Sterling, Kan., west by south through Reno and Stafford counties to Livingston, a distance of 45 miles. A survey is now being made.

**Texas & Pacific.**—This company makes the following statement for the three months of the current fiscal year from June 1 to Aug. 31:

	1879.	1878.	Inc. or Dec.	P. c.
Gross earnings...	\$467,563.50	\$432,504.06	1. \$35,059.44	8.1
Expenses...	285,988.07	327,404.88	D. 41,416.81	12.7
Net earnings...	\$181,575.43	\$105,099.18	1. \$76,476.25	72.8
Per cent. of exps...	61.16	75.70	D. 14.54	19.2

The contractors are now making steady progress on the extension from Fort Worth, Tex., to Weatherford.

**Union Pacific.**—This company, it is said, is having surveys made of a line from Fremont, Neb., nearly due north to Sioux City, Ia., about 80 miles, with a view of building a branch in that direction.

**Utah Southern Extension.**—Track on this road is now laid to a point 40 miles south by west from Juab (late Chicken Creek), Utah, the end of the Utah Southern and the beginning of this road. The grading parties are at work as far as Deseret, 17 miles beyond the end of the track.

**Wabash.**—This company is reported to be making surveys for an extension of the lately leased Eel River road from Butler, Ind., to Detroit, a distance of about 125 miles through a country already pretty well cut up with railroads.

**Western North Carolina.**—Track on this road is now laid from the Swannanoa Tunnel westward into Buncombe County nine miles, and trains run some six miles beyond the tunnel. The work of grading is advancing steadily towards Asheville.

## ANNUAL REPORTS.

The following is an index to the reports of companies which have been reviewed in previous numbers of this volume of the *Railroad Gazette*:

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Allegheny Valley.....	Long Island.....
Atchison & Nebraska.....	Maine Central.....
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Atlanta & Charlotte Air Line.....	Marquette, Houghton & Ontonagon.....
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Cin. & Mus. Valley.....	Oregon & California.....
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Cleveland & Pittsburgh.....	Pennsylvania.....
Columbus & Toledo.....	Pennsylvania Company.....
Col., Chic. & Ind. Cent. (P., C. & St. L.).....	Pennsylvania & New York.....
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Delaware.....	Richmond & Danville.....
Delaware & Bound Brook.....	Richmond, Fred. & Potomac.....
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Del. Lack. & Western.....	Rome, W. Town. & Ogdensburg.....
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Delaware & Western.....	St. Louis, Ark. & Terre Haute.....
Eastern.....	St. Louis Bridge & Tunnel.....
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Galv., Houston & Henderson.....	St. Louis, Van. & Terre Haute.....
Georgia.....	St. Paul & Duluth.....
Grand Rapids & Indiana.....	St. Paul & Sioux City.....
Grand Trunk.....	Sandersville & Tennille.....
Great Western of Canada.....	Scioto Valley.....
Hannibal & St. Joseph.....	Sioux City & St. Paul.....
Hartford, Prov. & Fishkill.....	South Carolina.....
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Kan. City, St. Joe & C. Bluffs.....	West Jersey.....
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Lake Erie & Lakeville.....	Wilmington & Weldon.....
Lake Shore & Mich. South.....	Wisconsin Minor Railroads.....
Lehigh Valley.....	Wis. Railroad Commission.....
Leavenworth & Galv.....	Worcester & Nashua.....
Little Miami (P., C. & St. L.).....	Worthington & Sioux Falls.....

## Louisville & Nashville.

This company's fiscal year ends June 30, and the following statements are from the President's report (the only part yet published) for the year lately closed.

The mileage at the close of the year was as follows:

	Miles.
Main Stem, Louisville to Nashville.....	185.00
Bardonia Branch.....	17.30
Knoxville Branch.....	169.90
Richmond Branch.....	33.80
Cecilian Branch.....	45.54
Memphis Line, Bowling Green to Memphis.....	259.10

Total Louisville & Nashville proper.....	650.64
Glasgow R. R. leased.....	10.50
Nashville & Decatur, leased.....	122.30
South & North Alabama, controlled and worked.....	189.30

Total..... 972.74

The South & North Alabama was increased by the Wetumpka Branch, 6.30 miles, completed about the beginning of the fiscal year.

The general account, condensed, is as follows:

Stock.....	\$9,052,950.28
Bonded debt.....	17,396,770.00
Current liabilities, including July and August interest and dividends.....	1,526,194.22
Profit and loss.....	3,492,003.91
Total.....	\$31,468,518.41
Total cost of road.....	\$24,865,647.70
Due from Transportation Dept.....	309,609.26
Bonds and stocks owned.....	1,888,677.47
Bills and accounts receivable.....	346,021.06
Real estate, timber and quarry lands.....	938,178.13
South & N. Ala. second-mortgage bonds and suspended interest.....	1,070,000.00
South & North Ala. advances.....	810,017.81
Nashville & Decatur, advances.....	421,872.65
Materials on hand.....	507,047.37
Cash.....	310,844.36

The bonded debt was decreased during the year by the pay-



## MAINE MINOR RAILROADS IN 1878.

NAME OF ROAD	PROPERTY.				LIABILITIES.				TRAFFIC.				EARNINGS.				Interest and rentals.	Dividends.
	Miles owned.	Miles leased.	Locomotives.	Passenger train cars.	Freight and other cars.	Stock.	Bonds.	Other debt.	Train mileage.	Passenger mileage.	Tonnage mileage.	Rate per passenger per mile.	Gross earnings.	Expenses.	Net earnings.	Per cent. of ex-cess.		
Bangor & Piscataquis.....	63	4	5	66		\$357,140	1,122,000	\$155,774	83,151	728,283	800,085	3.00	\$74,460	247,077	\$27,383	\$1,182	63	
European & North American.	114	19	12	22	253			76,134	300,017	4,788,078	6,296,204	2.83	359,873	230,351	129,522	2,706	65	\$67,500
Knox & Lincoln.....	40	5	13	59		364,580		2,395,000	108,432	1,417,525	696,180	4.73	111,176	59,827	51,349	2,269	54	
St. Croix & Penobscot.....	21	4	6	164		100,000	112,700	171,214	26,434	131,145	424,763	2.73	38,566	23,142	15,424	1,839	60	12,402
Somerset.....	25		2			354,294	450,000	78,386	15,725				20,854	15,401	5,453	834	74	

These figures are from the reports made to the Maine Railroad Commission for the year ending Sept. 30, 1878, and include all roads whose reports have not been otherwise published or included in lessees' reports.

The Somerset Railroad reports 8,008 passengers and 8,265 tons freight carried, but does not give mileage.

The European & North American is operated by Trustees, who report only their own liabilities and not those of the company. The Knox & Lincoln has no funded debt, but is responsible for \$2,395,000 own bonds and interest, reported as "other debt."

ment of \$10,000 on main office building mortgage, and \$43,950 Memphis, Clarksville & Louisville bonds. It now consists of \$7,070,000 consolidated mortgage bonds; \$2,000,000 ten-year gold mortgage bonds; \$60,000 main office building mortgage; \$1,000,000 Cecilian Branch bonds; \$3,500,000 Memphis & Ohio first-mortgage bonds; \$2,370,770 Memphis, Clarksville & Louisville first-mortgage bonds; \$88,000 Lebanon Branch Extension bonds; \$225,000 Louisville city bonds to Lebanon Branch; \$333,000 Louisville city bonds to Lebanon Branch Extension, and \$850,000 Louisville city bonds to Main Stem, not secured by mortgage.

During the year also the company bought \$20,000 Nashville & Decatur bonds and \$73,000 South & North Alabama sterling bonds for the respective sinking funds.

The net earnings of the Louisville & Nashville proper for the year were as follows:

Main stem and branches.....	1877-78.	1878-79.
Memphis Line.....	\$1,373,240.57	\$1,330,549.97
	335,435.27	251,328.30
Total.....	\$1,708,575.84	\$1,580,878.27
Interest on bonded and floating debt.....		1,065,469.00
Net balance.....		\$525,379.27
Dividends, 4 per cent.....		361,445.50
Surplus.....		\$163,933.77

The expenses of the Main Stem and branches were 50.80 per cent. of earnings; of the Memphis Line, 75.70 per cent.

The expenses of the Glasgow Railroad were 77.60 per cent., its earnings \$3,204.30.

The results of operation of the Nashville & Decatur road were as follows:

Gross earnings (\$5.958 per mile).....	\$728,653.14
Expenses (\$5.66 per cent.).....	405,549.90
Net earnings (\$2.649 per mile).....	\$323,103.24
Interest on bonded debt.....	\$149,059.22
Hire of engines and cars.....	38,525.23
Dividends on stock.....	98,553.44
	286,137.80
Surplus.....	\$36,965.35

The amount charged to construction account was \$11,739.21; during former years, \$283,125.85; total, \$294,865.06, which is to be reimbursed at the end of the lease.

The results of operation on the South & North Alabama road were as follows:

Gross earnings (\$4.013 per mile).....	\$873,196.76
Expenses (\$63.80 per cent.).....	558,610.81
Net earnings (\$1.663 per mile).....	\$314,585.95
Interest on bonded debt.....	\$333,571.27
Hire of engines and cars.....	81,300.63
	414,871.90

Deficit for the year.....\$100,285.95

Amount advanced on construction.....39,580.14

Purchase of 73 sterling bonds.....60,713.10

Advances and interest on old account, less cash received on old account.....27,563.13

Total advances for the year.....\$234,142.32

Compared with the previous year this line shows an increase of \$28,507.89, or 3.4 per cent., in gross, and \$20,938.07, or 7.1 per cent., in net earnings.

The earnings and expenses of the whole system of 972.74 miles for the year were as follows:

	Gross earn.	Expenses.	Net earn.
Passenger trains.....	\$1,585,632.90	\$1,073,335.24	\$512,297.66
Rent of passenger cars.....	22,541.07		22,541.07
Freight trains.....	3,627,924.67	2,082,488.54	1,545,436.13
Rent and detention, freight cars.....	71,085.51		71,085.51
Rent of engines.....	47,635.32		47,635.32
Rents.....	17,011.85		17,011.85
W. U. Telegraph contract.....	986.28		986.28
Net profit, Commissary Department.....	14,777.94		14,777.94
Total.....	\$5,387,585.54	\$3,155,823.78	\$2,231,771.76
Total, 1877-78.....	5,607,588.48	3,263,356.06	2,344,232.42

Decrease.....\$220,002.94

Per cent. of decrease.....3.88

The passenger train earnings were made up of \$267,797.04 from passengers; \$172,932.30 from express service; \$140,568.30 for mail service, and \$4,905.20 for train privileges. The earnings per mile of road, etc., compare with the previous year as follows:

	1878-79.	1877-78.	Inc. or Dec.	P. c.
Gross earnings per mile.....	\$5.530	\$5.302	D.	\$233 4.5
Expenses.....	3.344	3.377	D.	133 3.9

Net earnings per mile.....\$2.285

Per cent. of expenses.....58.57

The total expenses for road repairs during the year were \$733,482.81, a decrease of \$26,897.51 from the previous year. There were laid on the whole road 4,855 tons steel rails, 3,357 tons new iron rails, and 459,495 new ties, renewals being in excess of the previous year. Most of the renewals on the Southern divisions, excepting the Memphis Division, were in steel. About 5,900 tons steel have been contracted for for the current year. The track, bridges and equipment have been kept not only in good, but in improving condition, and the expenses for repairs and renewals have probably been reduced to the lowest point consistent with the proper maintenance of the property.

The company has expended \$136,364.56 thus far in

building the Cumberland & Ohio, Southern Division, in pursuance of agreement. The cost has been somewhat increased by some old claims brought in in excess of the estimates. The road will probably be finished to Greensburg by Jan. 1.

The falling off in net earnings shown above is traced to the loss of business on account of the yellow fever epidemic.

It is, of course, impossible to fix the exact loss from this source, but the estimated gross loss from interruption of traffic was \$300,000. The road carried free for sufferers 150,000 pounds of freight, gave transportation to sufferers to the amount of \$50,000, and ran some 1,550 miles of special trains for physicians, nurses, supplies, etc. The care of sick employees cost about \$5,000. Of 145 employees attacked by fever 71 died.

The passenger mileage of the road decreased 12.26 per cent., but rates were well maintained, the average receipt per passenger per mile being 3.43 cents, against 3.37 cents the previous year. The tonnage mileage showed a fair increase, but the average rate decreased nearly 8 per cent., partly from competition, but chiefly from failure of the tobacco and wheat crops.

The Transportation, Road and Machinery departments show gratifying results, decreasing expenses without loss of efficiency. No serious accident happened on the road during the year.

Notwithstanding the effects of business depression, increased and reckless competition and a wide-spread epidemic, the net earnings have increased from \$1,484,047.37 in 1872-73, to \$2,231,771.76 last year, a gain of \$747,724.39, or 50 per cent., a substantial result of careful management and a proof of the real value of the property. Even should the business of Memphis be permanently injured by the repeated visitation of fever, no serious loss need be feared from the injury to the Memphis Line.

The report refers to the arrangements made for the purchase of the Montgomery & Eufaula road. The company had bought a controlling interest in the bonds of that road, and intended to buy it in at the foreclosure sale, believing it would be worth, as a feeder and for control of business, the sum it would cost. Mr. Wadley, of the Central of Georgia, however, desired the line very much for his own road, so much so, that he was willing to pay for the road much more than its cost. The transfer of the interest to him was effected, this company realizing a profit of over \$250,000 on the affair.

The purchase of the St. Louis & Southeastern south of the Ohio River was a desirable one for many reasons. It was a disturbing element in Southern freight rates, and not only secured some business, but also lowered the rates on very much business that it did not get. Moreover, it had a right to joint use of the track from Guthrie to Nashville, which was already crowded, and nothing could be done to remedy this trouble. The road was secured for less than one-half its cost, and will probably be fully worth what has been paid for it. It passes through a good farming and mineral country, and furnishes, with its connecting lines, a direct connection with the grain fields of the Northwest.

The company agreed to build the Cumberland & Ohio, Southern Division, from Lebanon to Greensburg, 31 miles, and the work is now well advanced.

The present management has always looked forward to securing on independent line to the sea-board as an outlet for the road. Several lines have been looked at, but the one now apparently most feasible is an extension of the Knoxville Branch to the Kentucky line. Here it would meet lines under construction, and, through them, would secure connections to East Tennessee, Georgia, South Carolina and North Carolina; also, through these lines, a choice between Charleston, Savannah, Port Royal and Norfolk, as a sea-port terminus, and would also enable the company to command increased respect in certain contingencies. The extension of 65 miles could be built at a reasonable cost.

The \$1,000,000 Cecilian Branch bonds were offered for sale and disposed of at a very satisfactory price.

Reference is made to the suits begun by holders of Tennessee State bonds to enforce their lien on the railroads. This suit affects this company's Memphis Line from Guthrie to Memphis, that part of the Main Stem in Tennessee and the leased Nashville & Decatur road. The company has heretofore made full settlement with the State on the terms fixed by the Legislature, and it is not believed that the present suit will result in the enforcement of any lien as claimed.

The business of the South & North Alabama increases steadily and the road promises to be self-supporting before long. The coal and iron interests on the line are increasing and promise a rapid growth with the revival of the iron trade.

President Standiford says: "In conclusion, we can only say what we have often said, that our faith in the present and prospective value of your property is unbounded. As the chief channel between the Northwest, the South and the Southeast, with an important position toward the lines of the Southwest, it cannot fail, in this growing country, to become a most important factor in the carrying trade of the United States; and, with the improvement in all branches of business, now so rapidly progressing, and from which we shall receive our full share of the benefits arising, we believe that your road will make such strides in its advancement, that, within a few years, it will reach a point where it will be second to none in value as an investment in North America."

Western Union Telegraph.

At the annual meeting of the stockholders of this company, held Oct. 8, President Norvin Green submitted the usual annual report of the company's business for the year

ended June 30, 1878, which compares with the report of the preceding twelve months as follows:

	1878-79.	1877-78.
Gross receipts.....	\$10,078,897	\$9,335,810
Expenses.....	5,800,119	6,173,811
Net earnings.....	\$4,298,778	\$3,161,999
Construction of new lines.....	138,319	216,321
Purchase of stocks, patents, etc.....	145,135	44,758
Interest on bonds.....	430,528	453,742
Sinking fund.....	40,056	79,970
Total.....	\$754,038	\$794,791
Balance.....	\$3,515,740	\$2,367,208
Dividends.....	2,295,306	2,103,726
Surplus.....	\$1,220,434	\$263,482
Balance paid on A. & P. stock.....	537,166	
Surplus remaining.....	\$683,268	\$263,482

This comparison shows that the gross earnings of the company for last year were \$743,087 greater than for the preceding year; the expenses \$364,692 less; the net earnings \$1,107,779 more. The appropriation to the sinking fund last year was only \$40,056, instead of \$80,000, the amount usually set aside for that purpose in previous years. The net surplus of the year that remained after full payment of the debt incurred in the purchase of the Atlantic & Pacific Company's stock and dividends, \$683,268, added to the previous surplus, makes a total surplus of \$772,469.

The capital stock of the company is \$41,073,410, of which there was in the treasury, belonging to the company, July 1, 1878, \$6,004,835. From this there was distributed to the stockholders \$5,960,608, leaving the amount in the treasury \$44,227, and the amount outstanding on the 30th of June, 1879, \$41,029,183. The sum paid for dividends during the year includes only one quarter's dividend on the \$5,960,608 of stock that was distributed to the stockholders.

The company's bonded debt on June 30, 1879, compares with that of the preceding year as follows:

	1878.	1879.
Bonds due March 1, 1900, 6 per cent.....	\$981,234	\$971,514
" May 7, 1900, 7 ".....	3,920,000	3,920,000
" May 1, 1902, 7 ".....	1,373,000	1,373,000
Total.....	\$6,274,234	\$6,264,514
Less amount in the sinking fund and accrued interest.....	95,292	126,347
Total.....	\$6,178,942	\$6,138,167

The number of miles of line operated at the end of the year was 82,987, against 81,002 in 1878, 76,955 in 1877, and 75,757 in 1876. The miles of wire were 211,566, against 206,202 in 1878, 194,323 in 1877, and 154,472 in 1876. Number of offices open June 30, 1879, 8,534, against 8,014 in 1878, 7,500 in 1877, and 5,740 in 1876. The total number of messages sent during the last year was 25,070,106, against 23,918,874 in 1878, 21,158,941 in 1877, and 14,456,832 in 1876. Yet the gross receipts of 1878 amounted to \$9,333,018, against \$10,060,640 last year. Increase in number of messages, 10,613,269, or 88 per cent.; increase in gross receipts, \$1,527,622, or 16 per cent. But the net profits of 1879 were \$4,800,440, against \$2,757,962 in 1878, an increase of \$2,042,478, or 74 per cent.

INTERNATIONAL OCEAN TELEGRAPH COMPANY.

Of the capital stock of \$1,500,000, the Western Union owns \$1,038,500; the company itself owns \$97,300, and others own \$364,200. The net earnings of this company for the year ending June 30, 1879, were \$230,275.50. During the year there were paid regular quarterly dividends at the rate of 8 per cent. per annum, and \$78,900 of the bonded debt; leaving a surplus at the close of \$77,062, which was more than sufficient to meet the remaining bonded liabilities falling due Oct. 1, 1879, amounting to \$57,600, which, at this writing, have been paid as far as presented, leaving the company without debt and a handsome balance in the treasury.

GOLD & STOCK TELEGRAPH COMPANY.

This company has a capital stock of \$2,500,000, of which it holds in its treasury \$54,450, and the Western Union Company owns \$1,195,250, or a little less than one-half of the stock outstanding. The net earnings of this company for the year ending June 30, 1879, were \$260,629.65, out of which were paid quarterly dividends, amounting to 6 per cent. to the stockholders, \$35,000 in interest on bonds, and \$45,000 for construction and purchase of lines and patents. The surplus of \$20,500 has been invested in the American Speaking Telephone Company, of which latter company the Gold & Stock Company owns a two-thirds interest, and has the control and management. The Gold & Stock Company has a bonded debt of \$500,000, maturing May 1, 1885, of which it owns and has in its treasury \$65,000, and the Western Union Company holds \$100,000.

President Green concludes a general review of the company's affairs as follows:

"It will be observed that the later quarterly statements show a large increase in the appropriations for new construction. The increase in business in the last quarter of the year, and in the present quarter since the close of the year, has been so unexpectedly large that additional wires are an absolute necessity on all the main lines between New York and other large business centres, and they are being rapidly supplied. The first quarter of the present year closed on Oct. 1, and sufficient returns are in to exhibit revenues considerably above the estimate, and render it very much the largest quarter's business ever done by the company. The present year promises not to fall behind its predecessors in steady increase of revenues and profits."